the OIL AND GAS JOURNAL

Rates: Domestic, 1 year $6.00; 6 months, $3.00. Canadian and foreign, 1 year, $7.00; 6 months, $3.50. All subscriptions are payable in advance

VOL. 35, NO. 36
JANUARY 21, 1937

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

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Less Talk of Price Hike as Output Rises

THERE was less speculation in regard to probable general advances in posted crude schedules the past week as national production established a new record of 3,165,560 barrels daily. All of the principal oil states were producing in excess of the Bureau of Mines' recommendation, the total for the entire country being 167,160 barrels daily greater than its estimated demands announced the latter part of December as a guide to January operations.

Attention now centers on expected developments in regard to February operations with predictions that an effort will be made to bring about reductions in both crude production and runs to refinery stills. In the case of Oklahoma it has been indicated that the bureau will recommend an increase in February production over January of 8,800 barrels daily with an increase of 4,400 barrels for Kansas. Since little attention has been paid to the recommendations, actual production in these and other southwestern states will be dependent on the actions taken by the state regulatory bodies. Particular importance attaches to the attitude of the Texas Railroad Commission which in January hiked its allowable 72,907 barrels daily above the recommendation and the state is producing approximately that amount.

A decline of 858,000 barrels in stocks of refinable crude for the week ending January 2 more than offset the increase of 608,000 barrels for the previous two weeks. The latter was the first gain in national stocks to be reported since last June. The bulk of the decrease for the week of January 2 was in areas which had reported increases for the two weeks.

Production 3,165,560

Increase 58,158

In the Ventura Avenue field of California the Tide Water Associated Oil Co. completed its No. 12 McGonigle for the industry's deepest producing well. It showed an initial flow of 536 barrels daily at a depth of 10,569 feet. In the Yates pool of Texas a producer was completed with a flow of 1,579 barrels in one hour.

Weakness is apparent in the wholesale gasoline market in several refining centers. A.P.I. reports over the past three weeks have shown that gasoline was going to storage at an average rate in excess of 200,000 barrels daily. This is considered excessive, emphasizing the necessity of curtailing plant operations over the next sixty days, if stocks are not to become top-heavy by late spring. Products other than gasoline are generally reported firm to strong. Strikes centering in the automobile industry have reduced industrial demand for heavy fuels in some areas but this product continues to occupy a strong market situation at both coastal and interior points.

Daily Average Production for Week

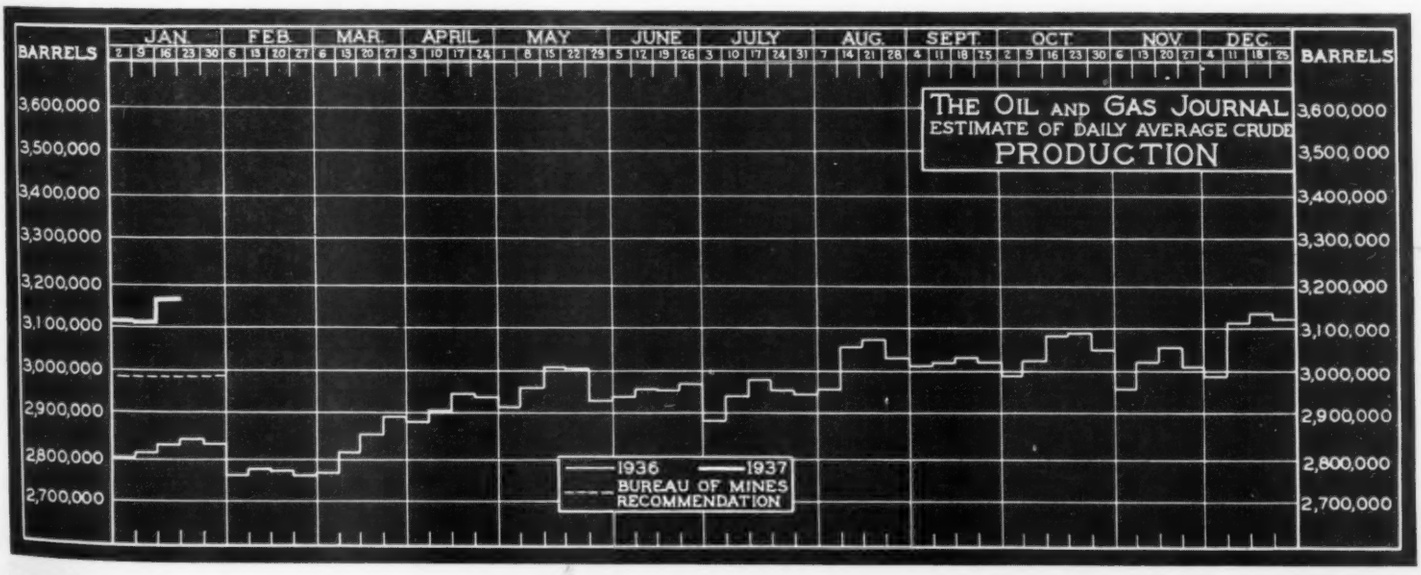
	Jan. 16 1937	Bur. Mines Jan. est.	Jan. state allowable	Jan. 9. 1937
Oklahoma City	162,200	.....	.....	135,650
Seminole-St. Louis	89,025	.....	.....	87,700
Remainder of State	347,425	.....	.....	336,775
Total Oklahoma	598,650	573,100	573,100	560,125
East Texas	451,789	.....	.....	452,200
West Texas	170,497	.....	.....	170,448
North Central Texas	97,698	.....	.....	97,983
Texas Panhandle	66,197	.....	.....	56,397
East Central Texas	97,495	.....	.....	96,097
Gulf Coast—Texas	275,500	.....	.....	272,712
Southwest Texas	89,650	.....	.....	89,449
Total Texas	1,248,826	1,176,000	1,248,907	1,235,286
North Louisiana	71,590	.....	.....	75,400
Gulf Coast—Louisiana	169,550	.....	.....	164,327
Total Louisiana	241,140	216,300	240,650	239,727
Santa Fe Springs	44,000	.....	.....	44,750
Long Beach	63,300	.....	.....	64,350
Kettleman Hills	75,700	.....	.....	74,750
Remainder of State	408,500	.....	.....	414,650
Total California	591,500	559,900	*551,100	598,500
Kansas	169,025	165,600	175,880	156,225
Arkansas	27,455	27,300	.....	27,545
Eastern Fields	115,000	112,200	.....	117,000
Michigan	29,534	29,200	.....	29,474
Southeastern New Mexico	79,770	79,180	91,755	79,170
Rocky Mountain area	64,660	59,620	.....	64,350
Total United States	3,165,560	2,998,400	.....	3,107,402

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending January 2, 1937	287,659,000
Week ending December 26, 1936	288,517,000
Week ending January 4, 1936	314,431,000



Increase of 1937 Seen

Drilling in Louisiana

Domestic drilling in 1937 will show a gain over the year just closed, assuring a continuance of expansion in field operations which brought a gain of approximately 100 per cent in well completions in 1936 over the depression low of 1933.

A check completed the first of the week showed that activity in exploratory and wildcat testing will be expanded in practically all sections of the country where there is any chance of finding new oil reserves. In the proven areas an expected gain in demand for crude oil of approximately 10 per cent will compel many companies to carry on extensive drilling programs in order to meet the demands of the refining and marketing branches of the industry.

It is not believed that the 1937 increase of 30 per cent for the first 16 days will be maintained but a total equaling the active year of 1929 would not be surprising to those most familiar with conditions. The reports by areas which follow do not indicate any frenzied drilling programs such as those which characterized several new producing areas in recent years. Where tracts are held in large blocks a conservative drilling program is usually in prospect for this year.

The reports also show that several fields which have been active over the past year or longer will show fewer completions the coming year unless important extension areas are opened up. East Texas, with over 22,000 completed wells, will continue to show a decline in drilling as will Oklahoma City and some of the active areas of Southwest Texas and the Gulf Coast.

NORTH LOUISIANA—ARKANSAS

Emerging from the most active leasing and exploratory year in its history, the North Louisiana, South Arkansas and East Texas border territory gives promise of continuing its strong position in the drilling and wildcatting program for 1937.

During the first few months of this year most companies are indicating preference to develop their proven properties in the face of needed crude supply, rather than continuing the large wildcatting program evident during 1936. Magnolia Petroleum and United Gas Production Co. have large proven and undeveloped tracts at Rodessa included on their early 1937 program. Should the attractive test at Jefferson, Tex., 13 miles southwest of present Rodessa production, prove productive, hundreds of thousands of acres will be thrown open. Arkansas Natural Gas Co. holds about 40,000 acres in this vicinity. United Gas Public Service Co. has found itself in a very strong crude oil producing position by virtue of the extensive acreage leased prior to discovery of oil at Rodessa on what was presumed to be prospective gas acreage. Now, as oil begins to appear on the flanks of these gas prospects that company finds itself with a very active development program ahead. Some have expressed the opinion this company's 1937 program is almost "topheavy." It owns practically solid the lands on the southwestern flank of Sligo gas field where oil has recently been discovered, and this area will see active development. Also, it controls extensive acreage in the trend from E. T. Oakes new discovery in the northeast portion of Claiborne Parish, many of which are short-term leases and require immediate development.

Standard Oil Co. of Louisiana has a very active 1937 drilling and exploration program budgeted, and plans to test several of its highly regarded blocks mapped by seismograph during the past 12 months.

Another factor that will keep this territory active is that several major companies maintain land, geological and scouting offices in Shreveport but do not have any production yet. They keep close check on all leasing, do some themselves, and are slowly becoming entrenched. Examples of such companies are Atlantic, Shell, Deep Rock, and most recently Skelly Oil Co.

In considering the wildcatting prospects generally, it should be pointed out that during the one and one-half years after discovery of deep Trinity production at Rodessa, more than 2,000,000 acres have been placed under lease. There are 28 known blocks comprising several thousand acres each, most of which were checked by geophysical means, and slated for drilling sooner or later. As the year opened there were 42 seismograph crews in this territory working on other lands, which were under geophysical option.

CALIFORNIA

In California all indications point to greatly increased drilling activity during 1937. All major companies have shown tangible evidence of enlarging the scope of work and now that Richfield Oil Corp. has been taken out of receivership and provided with adequate finances, this concern will join the procession. Wildcat drilling is expected to become an important factor as operators are searching for both gas and oil fields. The search for gas fields should be localized in the San Francisco Bay region, where several prolific fields have been discovered. There is still considerable undrilled acreage in areas where commercial gas deposits should be found and Standard, Seaboard and Amerada, discoverers and principal holders of productive acreage in dry gas fields, will likely continue their exploration work which has proved so successful. Standard and Shell will pursue an aggressive drilling program in the new fields discovered in the Greeley and Ten Section areas of Kern County. At least 10 wells are expected to be drilled in each of these during 1937.

In the Wilmington field of Los Angeles Basin, General Petroleum Corp., due to its extensive holdings, is expected to drill at least 20 wells during 1937 and may greatly exceed this number. In the McDonald Island gas field, Standard Oil Co. will probably drill another five wells and Amerada is expected to continue exploitation in the Rio Vista gas field. In the El Segundo field of Los Angeles Basin, Richfield Oil Corp. can be expected to drill about 10 wells, Republic Petroleum 6, Union Oil Co. 4, Ohio Oil Co. 2 and Texas Co. 2. These may be increased if the field proves larger. Barnsdall Oil Co. will drill several wells in the Newhall district if its present wildcat proves commercial production. This test looks hot with 55 feet of saturated oil sand cored to date. The Gato Ridge field will see several wells drilled in 1937 by both Barnsdall and Petrol Corp.

There is ample undrilled acreage in proven California fields to keep operators busy for at least another two years.

KANSAS

The Kansas oil boom that started in 1935 and was carried on over an ever-widening front in 1936 will continue throughout 1937, with the most aggressive drilling campaign in the history of the state predicted. Unless unforeseen developments retard wildcat exploration and operations in proven areas, Kansas production and drilling records will fall as new ones are made in the current year.

Field activity will extend almost from the Missouri line to the Colorado border, from Oklahoma to Nebraska. Northeastern Kansas is the only section not due for considerable activity.

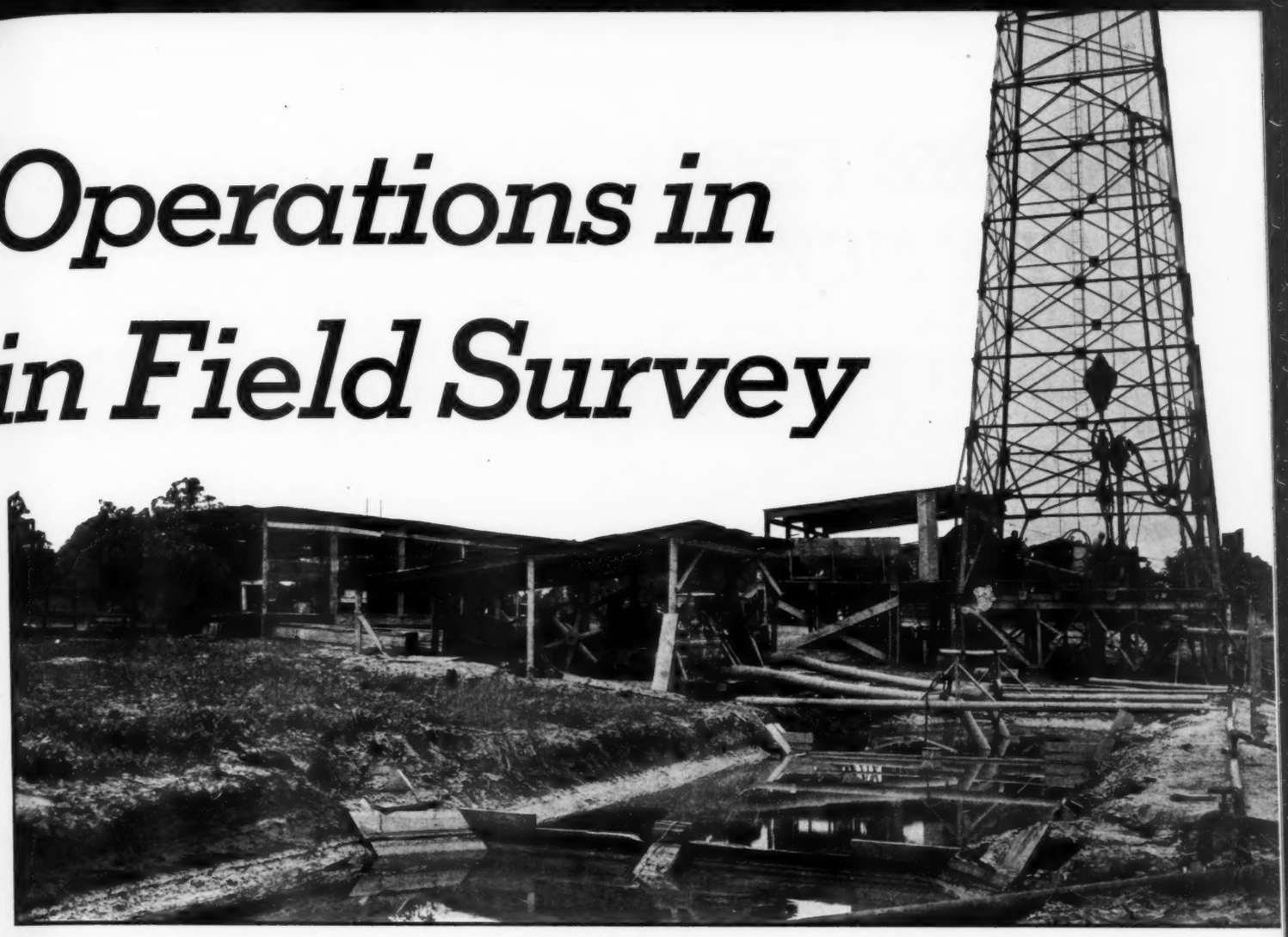
The most intensive drilling campaign will be along the Barton Arch in 1937, as in the past two years. The most active areas along this trend right now are in Reno, Harvey, McPherson, Rice, Barton, Ellsworth, Russell and Ellis counties, and they will continue to be busy for many months.

Cementing job

Proven areas of Rice, Russell and Barton counties will set the pace in activity and production, unless all signs fail. Many new pools were opened in these three counties in the past year, and extensions made to older pools. These will be further extended and intervening areas and inside locations drilled.

Township 21-7w, southern Rice County, is typical of several areas that will be busy, as operators drill inside locations and endeavor to extend and connect the Hauschild, Saxman, Theede and Ponce pools. Heretofore this sector has been developed by independents, but recently Atlantic Refining Co. bought acreage and producing wells in the township from L. E. Douglass, independent operator and discoverer of the Hauschild and Saxman

Operations in in Field Survey



Heavy diesel-powered rig

pools, and undoubtedly will be active this year.

The Trapp area of southern Russell County is a similar district that will see much development, as operators drill undeveloped areas between the Trapp, North Trapp, Sellens and Eichman pools, all in Township 15-13w. Coralena Oil Co. and W. I. Southern, Inc., was responsible for most of the early development, but Shell, Phillips, Gulf, Empire, Skelly, Sinclair Prairie, Barnsdall, Carter and Texas companies hold acreage in the township and most of them are due to participate in the work this year. In the waning days of 1936 two new pools were opened in northern Barton County, south of the Trapp area, and much of the play probably will go in that direction.

One of the busiest Kansas areas is, and will continue to be, the western Rice County-southeastern Barton County sector in which is the big Silica pool, straddling the county line; the Schartz, Chase and Raymond areas on the Rice County side, and the Peter and Ellingwood sectors in Barton County. Both independent and major operators are interested.

Other proven areas scheduled for intensive development include the Burrton field and its extensions in Reno County; the prolific Lerado field of Reno County, where Shell, Empire and Ohio hold most of the acreage; the Warkentine area of Harvey County; the Graber district of McPherson County, the Geneseo district of northern Rice County, where Continental Oil Co. is most active; the numerous proven areas of Ellsworth and Russell counties; the rich Bloomer pool and other Barton County sectors; Bemis, Ruder and other new pools in Ellis County, and the several new areas that have been opened in Rooks County the last two years. Wildcat activity also will continue in these counties.

Southern and southwestern Kansas seems destined to get the biggest development program in its history. Interest in southwestern Kansas was spurred by Olson Oil Co.'s Viola lime strike in Clark County late in 1936. This strike resulted in an extensive lease play in Clark and neighboring counties.

Much of western Kansas is under lease, some on short term leases that will require drilling this year. Some of the activity will center around Atlantic Refining Co.'s pool in Scott County, and around the Wakeeney and Riga districts of Trego County; but present indications are wildcatting will be carried on over a wide front extending from Oklahoma to Nebraska, and to the Colorado line.

The Hugoton gas field of extreme southwestern Kansas, largely centered in Stevens and Morton counties, may get its biggest play. This activity will extend into Seward, Meade, Haskell, Grant, Finney, Kearny and other neighboring counties.

New strikes in Barber, Kingman, Pratt, Stafford, Pawnee, Rush and Ness counties undoubtedly will result in increased activity, oil men say.

The older districts of Sumner County, where the Wellington pool is outstanding; Cowley County, where Lloyd, Study & Frost are developing the Weathered area and where a new Bartlesville sand pool has been opened east of Winfield; and Butler, Sedgwick, Greenwood, Woodson and Coffey counties will see much activity. Recent strikes have revived the older areas of Chautauqua, Elk and Wilson counties in the southeast. There also will be much activity in other eastern and southeastern counties, as operators seek new pay sands in old areas, redrill old wells and carry on waterflooding and repressuring projects.

OKLAHOMA

With production in many of the old fields de-

(Continued on Page 25)

Steam-powered rig on town lot

SPARKS FROM THE NEWS

Refiners of petroleum wax are holding their own. Their domestic market for the first eleven months of 1936 increased 33,554,000 pounds while exports decreased 34,778,000 pounds.

Good news for transportation agencies. Tons of Madison grand jury records are to be returned to defendant companies.

New York legislator proposes to grade gasolines A, B, C, which is the latest suggestion to include the industry under the rule of the alphabet.

If claims for gasoline tax exemptions are legitimate the significance of farm tractors as motor-fuel consumers has been greatly underestimated.

American Wildlife Institute says sportsmen spend $35,000,000 for gasoline and $3,500,000 for lubricants annually, which, among other things, may account for the remoteness of some filling station locations.

Tankers become larger and faster. One of all-welded construction now being built will transport 156,000 barrels of gasoline and go from the Gulf Coast to Philadelphia in six days.

Winter supplies less than demand point to substantial additions to natural gas pipe line systems this year. The 1936 gain is estimated at 20 per cent, establishing a new all-time peak.

With the projected 1940 requirements for petroleum products materializing this year, the subcommittees on future demand will have to reconvene and revise.

Ventura Avenue well in California starts producing at new record depth of 10,569 feet, which happens to be 9 feet more than two miles.

Having given it a fair and satisfactory trial, the oil industry supports the movement to make the Connally "hot oil" act permanent.

In normal times a large percentage of consumers want the best and are willing to pay for it. That is the basis for widespread program to increase sales of premium gasolines this year.

Continuance of federal taxes on gasoline and lubricating oils recommended in new budget. It will be recalled when first enacted they were "temporary."

Rescinding of 1931 marketing code paves way for new code covering conditions as they are today and tomorrow.

Yates—an old pool but scientifically developed—reports the largest well of the week with a rated production of 37,896 barrels daily.

GALLONAGE PRODUCER

The San Francisco-Oakland bridge, largest in the world, has become one of the greatest gallonage producers. A total of 670,651 vehicles used the span in December. With an estimated minimum of 10 miles per trip, 6,700,000 car miles were driven. At 10 miles per gallon this means 670,000 gallons per month, or approximately 8,000,000 gallons per year. Most of this gallonage was heretofore non-existent as only a small number of the 50,000 daily trans-bay passengers took their cars on the ferries.

"Public Utility" and Grading of Gasoline New York Threat

By H. STANLEY NORMAN

NEW YORK.—Regulations heretofore largely reserved for public utilities probably will be recommended for imposition on the petroleum marketing industry in New York State during the latter part of February. From the line of questioning at a hearing in New York early this month, from information asked of oil companies in a widely distributed questionnaire and from statements of Harold B. Ehrlich, chairman of the joint legislative investigation committee, it is believed specific gasoline standards will be recommended for enactment into law. Thus, the State of New York may assume regulatory powers over marketing of petroleum similar to those now exercised in the state over milk.

CHAIRMAN'S VIEW

The investigating committee is scheduled to meet in Albany this week to review the testimony which it has obtained from various views.

Assemblyman Ehrlich, of Buffalo, chairman of the committee, has indicated he favors legislation declaring gasoline a "public utility." Parts of the resolution creating the committee also indicate New York legislators are thinking strongly of gasoline as a "public utility." Representatives of several oil corporations were questioned at meetings in New York last week, but little information was developed not previously generally known within the industry. Witnesses questioned were George A. Perriman, eastern manager of Socony-Vacuum Oil Co., William L. Kallman, eastern sales manager of Texas Corp.; Daniel M. Cox, sales manager of Colonial Beacon Oil Co.; Walter L. Day, Jr., assistant to the vice president of marketing of Shell Union Oil Corp.; Edward D. Rohrbach, assistant eastern manager of Pure Oil Co., and Erwin C. Stein, assistant general manager of the northern division of American Oil Co.

Others who testified were Kenody R. Ware of Sun Oil Co.; Frank D. MacEachern, Tide Water Associated; J. C. Gonzales, Ethyl Gasoline Corp.; E. Waldo Emerson, Gulf Oil Corp.; George W. Hawkins, Cities Service Oil Co.; James E. Dyer, Richfield Oil Corp.; Thomas L. Harrigan, Sinclair Refining Co. and Harold B. Stone, Atlantic Refining Co.

Assemblyman Ehrlich, Alger A. Williams, counsel to the committee, and Isidor E. Schlesinger, associate counsel, manifested particular interest in the failure of oil companies to pass a one cent tax reduction last June to the consuming public. The cent rise in gasoline prices during the last of December also was the object of questions.

The December advance was initiated by Socony-Vacuum and most of the witnesses said they welcomed it and followed the raise. Mr. Perriman said price fluctuations were based largely on ocean freight rates between the Gulf of Mexico and New York.

Assemblyman Ehrlich's suggestion that if gasoline were graded by law the public would be protected from price cutting by sellers of inferior gasoline and reputable dealers would be rid of annoying competition from these concerns found no favor with witnesses. Representatives of oil companies insisted the public knew it could protect itself by buying from reputable companies, that the industry was keenly competitive and there had been no gasoline on the market for years which could actually harm an internal-combustion motor.

OPPOSE TRADING

Witnesses asserted a new type of engine would render obsolete any standard of grading and extreme temperatures would force these to be set at so low a minimum they would do no one any good. The question of enforcement was also injected into the record by oil company witnesses who said the problem would require some sort of sealed container to avoid evasion. The fact that consumers in states now having inspection laws for gasoline are paying a higher price to defray the expense was also brought forward. A few representative witnesses from the retail field may be called before the hearings end.

Station in shadow of skyscrapers

QUESTIONNAIRE

Replies to the questionnaire distributed to companies engaged in all branches of the oil business probably will play an important part in the report to Governor Lehman and the legislature about February 15. Accompanying the questionnaire is a summary of the resolution creating the committee which reflects what the investigation leaders think.

"Whereas", reads the resolution, "the automobile . . . is now in the nature of a practical necessity to the public at large, and

"Whereas, the cost of gasoline and other motor fuels and oils is of paramount importance in making possible the free and general use of this modern means of transportation and travel, so vital in the lives of everyone today, and

"Whereas, of late there has been a marked and material increase in the price of gasoline, and

"Whereas, the ownership and operation of so-called gas stations by independent and individual owners and operators has shown a very material decrease in recent years, and at the same time these outlets for the sale of gasoline and oils to the individual car owner have been increasingly monopolized, particularly in the denser areas of population, by the large oil companies, and

"Whereas the sale of gasoline, oils and motor fuels is substantially affected with the public interest, so that they may be made available to all our citizens at a fair price under all the circumstances, and

"Whereas, there exist many dangers in the present trend toward centralized control of the sale of these commodities to the public, which may result and perhaps has already resulted in the opinion of many in the fixation and charge to the public of a price much greater than warranted in contravention of the public interest and in the creation and maintenance of harmful monopoly,

"Now, therefore, be it resolved that a joint committee of the Senate and Assembly be created, to consist of four members of the Senate and five members of the Assembly to make a study and investigation of the cost price to the public of gasoline and other motor fuels and oils, in all its ramifications, including the cost of manufacture, distribution, taxes and other allied elements entering into the price structure, and also including the corporate structure of producers, distributors and retailers and agreements and arrangements among themselves and with others and their methods of carrying on their business, to the end of determining the true nature, character and extent of the traffic in motor fuels and oils, and whether or not the public is being or has been charged excessive prices therefor, and whether or not any unlawful or illegal or criminal acts have been or are being committed therein."

The questionnaire attempts to delve into the complete structures of every oil company within the state. It is divided into four groups. Retailers are asked to answer two groups of questions dealing with their corporate structure, and marketing purchasing agreements, and methods, causes and results of price changes among other details. Producers and refiners are asked to supply a complete list of their properties and actual costs of recovering and processing a barrel of oil. Wholesalers, jobbers and distributors are asked to give their corporate structure and answer questions relating to margins, costs of products, from whom they are purchased and the cost of transporting them to service stations and storage.

For its position as a consumer of motor fuel

and the advanced stage of legislative developments, New York State is now the focal point of interest on the "public utility" label Assemblyman Ehrlich has plastered on the oil industry. However, the same line of thought with only minor variation is fermenting in the minds of other states' officials.

Governor Earle of Pennsylvania has expressed favor for a committee to "study the question of monopolistic practices in the gasoline and oil industry, particularly price wars and price fixing," although he is not pressing for action until the "bootleg coal" committee reports.

Senator Baldwin, chairman of the Michigan legislative committee which delved into oil marketing conditions a year ago, is known to favor a state fair trade practice law to be administered by an agency patterened after the Federal Trade Commission.

North Carolina's legislature has appropriated a sum to build a state-owned oil terminal if the state is not permitted to continue buying gasoline at "fair" prices. The state is also considering a law to limit service stations through a licensing system.

Governor Quinn of Rhode Island said large oil companies have unjustly taken millions of dollars out of the pockets of the public and suggested the public utility division be empowered to see the price of gasoline.

Recommendation that gasoline be made a "public utility" was made by Governor Ayres of Montana in his message to the legislature.

Well Spacing Committee Headed by G. A. Hill, Jr.

A committee of oil company executives has been appointed by President Axtell J. Byles, of the American Petroleum Institute, to collect fundamental data on the proper spacing of oil wells and to prepare an educational program designed to promote proper well spacing as an important factor in petroleum conservation.

George A. Hill, Jr., of the Houston Oil Co. of Texas, Houston, has been appointed chairman of the committee on Well Spacing, which has 32 members and alternates. Creation of the committee was authorized by the Institute's Executive Committee at the 17th annual meeting in Chicago in November by a resolution declaring that well spacing "probably is the most important matter before the production branch of the industry."

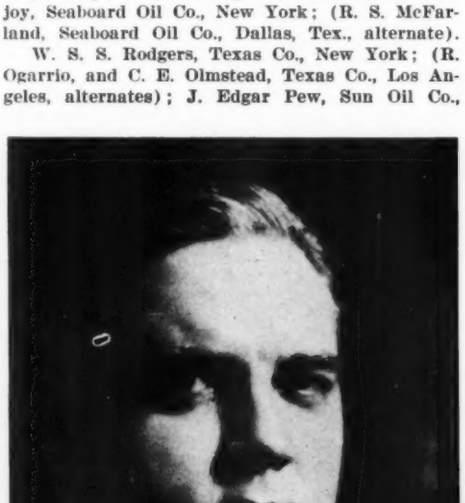
Attention was attracted to the need for proper well spacing shortly after the publication in 1929 of the report of a cooperative study made by the Bureau of Mines and the Institute revealed the importance of the function of natural gas pressure in lifting crude oil to the surface and indicated that the drilling of unnecessary wells, and particularly the unnecessarily close spacing of wells, tended to dissipate gas pressure and curtailed the productive life of oil pools.

Recent experiments in well-spacing, particularly through the development of oil pools on the unit plan with all wells drilled in strict accordance with scientific determination of production needs, largely has established the advisability of spacing wells in such a way as to conserve and to utilize to best advantages the pressure of natural gas, and also of water, with resulting recovery of a larger proportion of oil and an extension of the producing life of the pool. In recent years the tendency has been to space wells more widely and also to curtail the number of wells drilled so as to facilitate control of gas pressure, and to maintain water pressure.

Members and alternate members of the Committee on Well Spacing, which is to report to the Institute's Board of Directors, follow:

W. H. Berg, Standard Oil Co. of California, San Francisco; (M. E. Lombardi, alternate); J. D. Collett, O'Keefe & Collett, Fort Worth, Texas; Wirt Franklin, Wirt Franklin Petroleum Corp., Ardmore, Okla.; R. G. A. van der Woude, Shell Union Oil Corp., New York; (Alexander Fraser, Shell Petroleum Corp., St. Louis, Mo., and S. Belither, Shell Oil Co., San Francisco, alternates); Jake L. Hamon, Cox & Hamon, Dallas, Tex.; H. L. Hunt, H. L. Hunt, Inc., Tyler, Tex.; W. M. Irish, Atlantic Refining Co., Philadelphia, Pa.; (W. M. O'Connor, alternate); A. Jacobsen, Amerada Petroleum Corp., New York; (A. M. Blow, Amerada Petroleum Corp., Tulsa, alternate); Ralph B. Lloyd, Lloyd Corp., Ltd., Los Angeles; and John M. Lovejoy, Seaboard Oil Co., New York; (R. S. McFarland, Seaboard Oil Co., Dallas, Tex., alternate).

W. S. S. Rodgers, Texas Co., New York; (R. Ogarrio, and C. E. Olmstead, Texas Co., Los Angeles, alternates); J. Edgar Pew, Sun Oil Co., Philadelphia; (M. B. Sweeney, Sun Oil Co., Dallas, alternate); Frank Phillips, Phillips Petroleum Co., Bartlesville, Okla.; (C. P. Dimit, alternate); E. B. Reeser, Barnsdall Oil Co., Tulsa; (R. A. Broomfield, Barnsdall Oil Co., Los Angeles, alternate); Charles F. Roeser, Roeser & Pendleton, Inc., Fort Worth; E. G. Seubert, Standard Oil Co. (Indiana), Chicago, Ill.; (A. W. Peak, and Frank O. Prior, Stanolind Oil & Gas Co., Tulsa, alternates); and H. F. Sinclair, Consolidated Oil Corp., New York; (C. E. Crawley, and W. L. Connelly, Sinclair Prairie Oil Co., Tulsa, alternates).



GEORGE A. HILL, JR.

W. G. Skelly, Skelly Oil Co., Tulsa; (H. M. Stalcup, alternate); W. S. Farish, Standard Oil Co. of New Jersey, New York; (J. R. Suman, Humble Oil & Refining Co., Houston; C. H. Lieb, Carter Oil Co., Tulsa; and J. R. McWilliams, Standard Oil Co. of Louisiana, Shreveport, La., alternates); R. L. Wheelock, Wheelock & Collins, Corsicana, Tex.; F. A. Leovy, Gulf Oil Corp., Pittsburgh, Pa.; (W. B. Pyron, Gulf Oil Corp., Houston, and Rush Greenslade, Gulf Oil Corp., Gypsy division, Tulsa, alternates); and J. A. Brown, Socony-Vacuum Oil Co., New York; (W. L. McLaine, General Petroleum Corp. of California, Los Angeles, and D. A. Little, Magnolia Petroleum Co., Dallas, alternates).

O. D. Donnell, Ohio Oil Co., Findlay, O.; (W. W. Fleming, Ohio Oil Co., Tulsa, alternate); Frank R. Coates, Cities Service Co., New York; (H. R. Straight, Empire Oil & Refining Co., Bartlesville, Okla.; Burdette Blue, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; and D. W. Harris, Arkansas Natural Gas Co., Shreveport, La., alternates); Henry M. Dawes, Pure Oil Co., Chicago; (R. W. McIlvain, alternate); and D. J. Moran, Continental Oil Co., Ponca City, Okla.; (R. E. Collom, Continental Oil Co., Los Angeles, and J. G. Dyer, Continental Oil Co., Ponca City, Okla., alternates).

L. P. St. Clair, Union Oil Co. of California, Los Angeles; (F. F. Hill, alternate); E. L. Shea, Tide Water Associated Oil Co., New York; (E. H. Salrin, Tide Water Associated Oil Co., Houston, and J. H. Jenkins, Associated Oil Co., San Francisco, alternates); E. DeGolyer, Felmont Corp., Dallas; N. C. McGowen, United Gas Public Service Co., Houston; and E. H. Moore, E. H. Moore, Inc., Tulsa.

World's Deepest Producer

Tide Water Associated Oil Co. No. 12 McGonigle, completed in Ventura Avenue, California, field January 17 at total depth of 10,569 feet, made a flow of 536 bbls. daily of 30.3 gravity oil, cutting 3.6 per cent. Also made 430,000 feet of gas, all through 55/64-inch bean, with tubing pressure 20 to 30 pounds and casing pressure 500 pounds. It is the deepest producer in the world.

OBITUARIES

ROBERT E. BEIGHLEY, 68, Muskogee, Okla., oil man for 25 years, died suddenly January 13 after a heart attack.

HENRY C. SMART, 70, retired executive of Standard Oil Co. of New York, died January 14 in New Rochelle, N. Y. He entered the company's employment in 1890 and was made chairman of the manufacturing committee in 1915 and appointed general manager of manufacturing in 1920, which he held until retirement in 1930.

DR. WILLIAM HENRY COLLINS, 58, director of the Canadian Geological Survey until a departmental reorganization, when he became consultant to the mines and geology branch of the Department of Mines and Resources, died in Ottawa, Canada, January 14. He was a former president of the Geological Society of America.

SIDNEY V. STEWART, 54, vice president and general manager of the Ajax Iron Works, Corry, Pa., died January 14, following an attack of pneumonia. He was a founder of the Standard Turnbuckles Co., now the Aero Supply Corp. He had been affiliated with the Ajax company since his graduation from Cornell 30 years ago.

DR. JULIUS STIEGLITZ, noted chemist, died last week in Chicago of pneumonia. He had been a member of the faculty of University of Chicago for 43 years and retired in 1933, remaining as a lecturer and research worker. The American Chemical Society in 1923 gave him the Willard Gibbs medal for distinguished achievement in chemistry. At the time of his death he was a consultant for Universal Oil Products Co.

Half Million Barrels of Oil Burned in One Night to Save Fruit

By L. P. STOCKMAN

LOS ANGELES, Calif.—For the past few weeks central and southern California have experienced the most persistent severe cold snap in about eight years, and citriculturalists have been driven almost to distraction in efforts to protect the orange and lemon crop. On cold nights following warm days, the Weather Bureau Fruit-Frost Service recommends heating at 26 degrees for ripe oranges and 27 degrees for green or half-ripe oranges and grapefruit. On cold nights following cold days the recommendations are one-half degree higher and damp nights are more dangerous than dry nights with similar temperature as citrus fruits begin to freeze at a higher temperature when they are covered with ice than when dry.

Freezing night temperatures are quite common in most of the citrus areas of California at this time of the year, but they normally occur at infrequent intervals and last only a short time, so ranchers have ample time to replenish depleted smudge pots against the next threat. Ordinarily, too, the coldest temperatures reached in the citrus growing districts are very close to freezing point (32° F) and it doesn't take a great many B.t.u.'s to render the slight frost impotent.

Recently, however, California weather has subjected almost the entire state to an unprecedented spell of low night temperatures. It has been not only of exceptionally long duration, but the recorded temperatures have been considerably below freezing at many points, dropping in many sections to 18 and 19 degrees. Nightly broadcasts are made over California radio stations indicating temperatures to be expected in all citrus growing areas and frost warnings are issued. There has been mighty little sleep for ranchers lately, because frost has been almost a nightly occurrence.

HEATING FACILITIES

According to a comparatively recent estimate there are 62,400 acres of citrus bearing lands in California heated with oil and each acre having approximately 50.7 smudge pots, there must be a total of more than 3,000,000 oil burning smudge pots. These 3,000,000 frost fighters have been burning almost nightly for two weeks.

Oil is the principal source of heat, but oil briquettes are used to heat approximately 5,350 acres. Orchardists favor the pillow type briquette in preference to the square or round type. The oil briquettes are fired by using a little kerosene. During the recent cold spell orchardists exhausted their stock of briquettes and practically every major company having facilities in the citrus belt operated oil delivery trucks on a 24-hour basis for several days. There are two general types of smudge pot that find extensive application, the most popular being the common open top heater which is merely a fuel reservoir with a restricted neck. The other type, gradually coming into more general use because of economy and ease of operation, is equipped with a burner. The fuel for these is usually pumped from a centralized supply container through pipe lines and the burner is of the pressure type.

OIL SUPPLY

Many of the citrus growers maintain their own storage systems for fuel supplemented by supply at the packing plants, but the total estimated capacity at these two locations is only about 45,000,000 gallons. Since the oil needed for one filling of all the heaters in the California citrus industry is approximately 21,750,000 gallons and one filling is just sufficient for an evening's battle, citriculturalists are not very well equipped for a long siege. The estimated consumption of the heaters is roughly a gallon an hour and they hold from 6 to 9 gallons. A movement is under way, due to an approximate loss of 20 per cent of crop, to increase substantially storage facilities at both grooves and general distributing plant depots. A large part of this orchard heating oil is delivered to orchardists and packing plant depots during the summer but prolonged cold spells make it necessary to resume deliveries on a 24-hour basis during the winter. Experimental work is being carried on with natural gas heaters fed through a central system by pipes buried 20 inches below the surface. The main drawback to this system is that domestic consumption of gas is always at the peak simultaneously with the demand for orchard heating and the State Railroad Commission has ruled domestic consumers must be given preference.

In open heaters either stove oil or diesel oil will give satisfactory service, but the burner heaters are fueled almost exclusively with stove oil because of the necessity for a more volatile and less viscous fuel. Specifications for these two oils are roughly as follows:

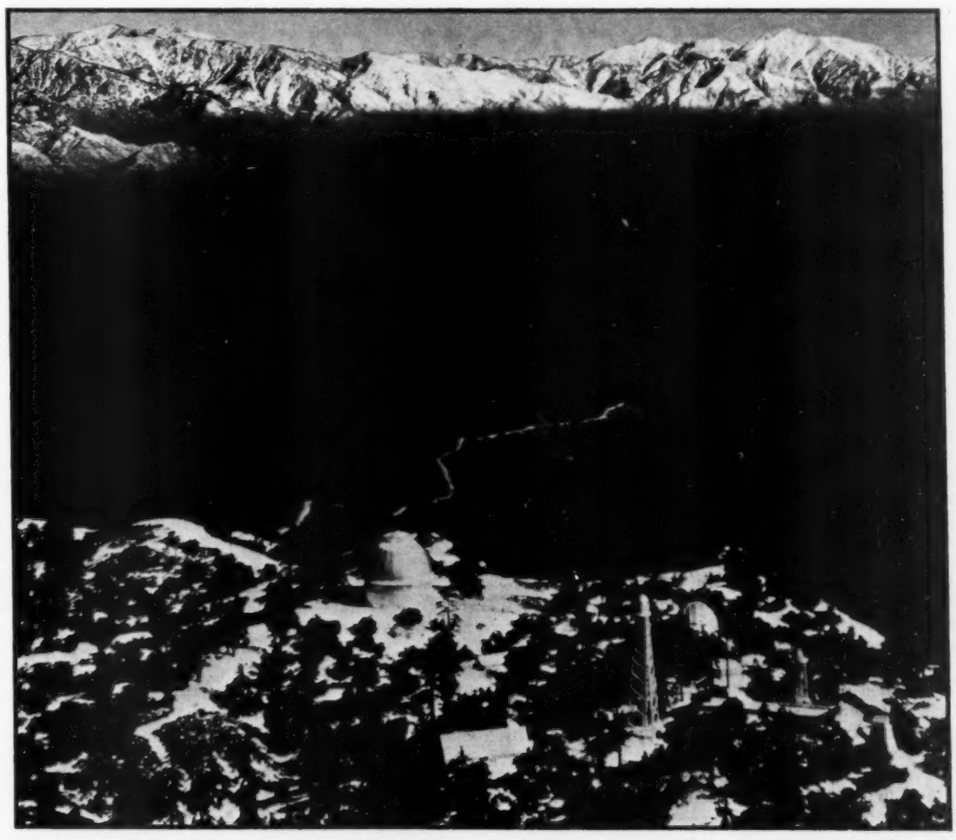
	Stove oil	Diesel oil
Gravity, °A.P.I.	37.5	*27+
Flashpoint, °F.	150	200
Viscosity (unit at 100° F.), sec.	33	41
Pourpoint, °F.	0	15
Carbon residue	0.01	0.05

*Usually 32.5°.

The present cost of burner fuel at the refinery for diesel oil is from 3 cents to 3½ cents per allon and for stove oil, from 4¼ cents to 4½ cents, to which must be added delivery costs. Although specifications of orchard heating oil come within the range of stove and diesel oil, citriculturalists often find it necessary in a pinch to use various grades of gas oil, diesel, kerosene distillate and oil within the light fuel range.

SPECIFICATIONS

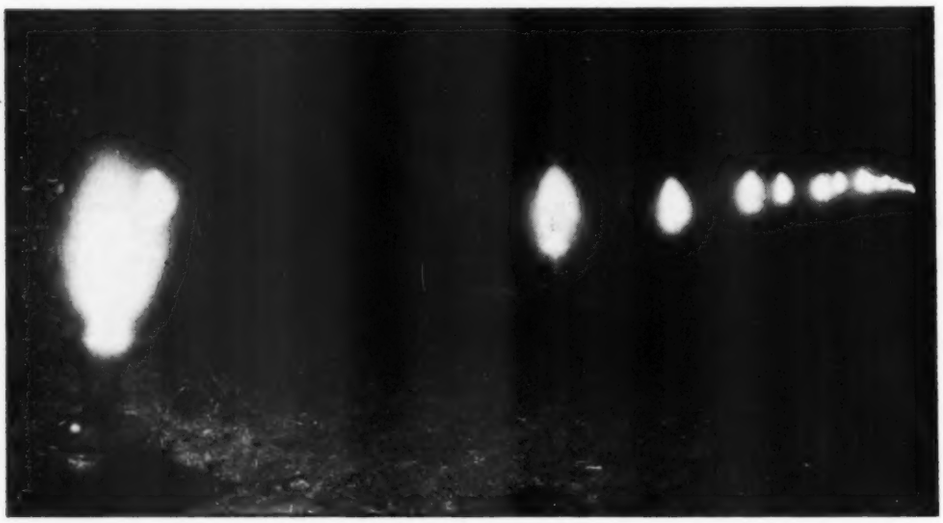
It is somewhat difficult to say just to what extent these factors should be considered in the evolution of a burner oil. The burner heaters point to the necessity for higher gravity, lower flash point and lower viscosity, compared with the requirements for the open top heater in which the fuel is often ignited by merely tossing into the pot a piece of lighted paper. In such a case it would obviously be advisable to boost the flash point and lower the volatility, in the interests of safety if for no other reason. The necessity for



Citrus groves between snow-covered mountain ranges blotted out by smoke from orchard smudge pots. Carnegie observatory, Mt. Wilson, in foreground.—(Photo by Warren Carey, Union Oil Co. aviator)

a lower pour point oil for use in the burner equipped heater is obvious and wax separation, or an undue tendency to carbonize might exert a deleterious effect on burner performance. Shell Oil Co. has built up a good market in California for oil briquettes for both orchard heating and domestic purposes and is contemplating a further expansion.

The trend in heating oils for this specific purpose has probably been influenced to some extent by a public demand for some abatement of the smoke nuisance, which makes itself felt in a number of ways after these smudging parties. Partly through more highly refining and treating of the oils and also through adaptation of the heater to give a more complete combustion, these heater fuels are much more stable from the standpoint of smoking than they used to be. As an indication of one of the more obscure effects of the smudging business, a bird fancier was recently bewailing the fact that a pair of canaries which he had all ready for a bird show, had gradually developed the plumage of a pair of ravens during the smudging season.



Orchard heaters during cold spell

There are existing ordinances in some of the California counties prohibiting use of certain types of smudge pots because of the smoke nuisance, but they have never been enforced for the reason that until a better practice is found the present one is vitally essential to the citriculturalist. Recently attempts have been made to develop new methods and two California orchardists claim to have successfully battled the frost menace by installing blowers. These fans equipped with airplane motors direct a stream of air just above the trees, keeping the atmosphere moving and thus preventing frost from settling. This brings up the old question whether the efficiency of the smudge pot is due to actually raising the local temperature in the vicinity of the trees or merely keeping the air in motion by the induction of currents.

FUEL CONSUMPTION

There are usually approximately 50 smudge pots allotted to each acre, and since each will burn anywhere from 5 to 9 gallons on a cold night, the total consumption for California for a frosty night varies from 15,000,000 to 25,000,000 gallons. When a freezing spell continues for a week or so, it develops the necessity for immediate large deliveries. The present delivery trucks are not all equipped with pumps and the oil companies do not care to invest a great deal of money in transportation facilities to handle a situation that has only cropped up once in eight years. The present dump system of delivery is inefficient and uneconomical and could be expedited by use of small portable pumps in the grove.

Jurisdiction Challenged in Madison Inquiry

MADISON, Wis. — Jurisdiction of the western Wisconsin district federal court has een challenged by the Mid-Continent Petroleum Corp. of Tulsa, the first of 27 defendant oil companies to contest new indictments returned by a second grand jury here last month under the Sherman Antitrust law.

The company, by its vice president, J. C. Denton, and Attorney R. H. Wills, filed a special appearance January 15, pleading to the court's jurisdiction and venue. It is a defendant in each of two general indictments charging conspiracies to maintain artificial gasoline price levels and to restrict jobber margins. The company's plea, in each case, maintains that "the indictment herein fails to show that the alleged crime charged or attempted to be charged therein was committed in the western district of Wisconsin, or in the state of Wisconsin, but, on the contrary, said indictment affirmatively shows that if said offense was committed, the same was committed not in but outside the western district of Wisconsin and the state of Wisconsin" and that "by reason thereof said defendant, the Mid-Continent Petroleum Corp., is not indictable and cannot legally or constitutionally be tried in the western district of Wisconsin."

Judge Patrick T. Stone had not, up to this time, been called upon to decide the question of jurisdiction. Similar pleas were entered by several defendants named in indictments returned last July and November, covering the same grounds, but they were withdrawn when all the defendants joined in a plea in abatement, attempting unsuccessfully to quash the indictments on the grounds that the December, 1935, grand jury which returned them was illegally impanelled.

After the first indictment, voted July 28, had been challenged, the second, handed down on November 6, included allegations purporting to establish jurisdiction. Government attorneys drafting the new indictments, filed by the new grand jury on December 22, made similar efforts to show jurisdiction and venue.

The indictment alleging a conspiracy to maintain artificial prices through a cooperative buying pool, covers the point in the following manner:

"The combination and conspiracy herein set forth has operated and has been carried out in part within the western district of Wisconsin. In pursuance of said combination and conspiracy, defendant major oil companies (with the exception of Standard of Indiana and Gulf) have contracted to sell and have sold and have delivered large quantities of gasoline in tankcar lots to jobbers within said district at the artificially raised and fixed and noncompetitive prices aforesaid and have arbitrarily exacted from jobbers within said district large sums of money. Defendant major oil companies (with the exception of Gulf) have solicited and taken contracts and orders for said gasoline within said district, sometimes by sales representatives located there, which district has been an important market for their product and they have required retail dealers and consumers in said district to pay artificially increased prices for gasoline, as aforesaid, all by virtue of said combination and conspiracy and pursuant to the purposes and ultimate objectives thereof."

The other indictments alleging that the oil companies executed uniform contracts with jobbers throughout 10 middle western states in a combination to restrict their margins of profit, essays to establish jurisdiction and venue on the following assertion:

"The combination and conspiracy herein set forth has operated and has been carried out in part within the western district of Wisconsin. During and throughout the period covered by this indictment defendant major oil companies (with the exception of Gulf) have marketed either directly or indirectly through affiliated or subsidiary companies, large quantities of gasoline in interstate commerce within said district in competition with jobbers, the practices and policies of defendant major oil companies with respect to whom have been determined and made uniform by agreement and concerted action and whose ability to compete with said defendant major oil companies has been restrained and restricted, as aforesaid. Said defendant major oil companies (with the further exception of Standard of Indiana) have sold and delivered to jobbers large quantities of gasoline within said district in interstate commerce. Said defendant major oil companies selling to jobbers, throughout the period of time aforesaid have, pursuant to said combination and conspiracy, substantially restrained competition among themselves within said district in their practices and policies affecting jobbers, in their dealings with jobbers, in the solicitation of jobber accounts, and in contracting with jobbers, and have refrained, within said district, from competing freely with each other in respect thereto. Said defendant major oil companies in effectuating and carrying out said combination and conspiracy have employed said uniform and arbitrary rules and practices in their dealings with jobbers and prospective jobbers within said district, and have sold and delivered in interstate commerce large quantities of gasoline to jobbers within said district on the basis of said uniform and arbitrary rules and practices."

Companies under indictment gained a point in their preparations for trial last week when Federal Judge Patrick T. Stone signed an order permitting documents produced under subpoenas at the 1936 investigations to be returned temporarily.

The order, extending and broadening previous decrees impounding the evidence, requires that the owners of the records shall apply to the court for them and leave a written agreement with the clerk to return them within 30 days of the first trial scheduled. Motions for further changes in the order will be heard February 1.

Pipe Line Expansion Reflects Refinery Activity

By L. G. E. BIGNELL

Making a side bend in 10-inch pipe using heavy tractor mounted winches and booms

Long welded section of 10-inch pipe being moved and lowered into ditch by two heavy-duty tractors

An outstanding example of careful planning and rapid execution of pipe line work is to be found in the 287 miles of 10-inch loops laid by the Gulf Pipe Line Co. on the main line between Oklahoma and Ohio. Late last fall it was decided to increase the capacity of this system through the laying of 13 loops and installing an additional engine and pump in each of the 12 main line pump stations. The job was completed in 56 days from its start about the middle of October and oil has been pumped through most of the loops since the first of this year.

As time was the essential feature of the contracts the crews worked day and night. To clear the right of way heavy bulldozers were used and to carry on this work at night these machines were equipped with headlights. Following the bulldozers, the ditching machines, also equipped with electric lights, carried on day and night. To furnish light for these machines small portable electric generators of 1,200-watt capacity were mounted upon the body of the tractors or ditchers and lights strung around the operator's cab and in the case of the ditchers two lights were mounted on each end of the machine so that the right of way was illuminated for a considerable distance in either direction. The lighting outfits weighed about 225 pounds each and were powered with gasoline engines. Fourteen-inch reflectors were used.

To prepare the right of way for the ditchers, crews were sent a considerable distance ahead of the machine to drill and blast the rock encountered on a considerable portion of the line in Missouri. With this preparation, the ditchers had no trouble in excavating the ditch and the work proceeded rapidly.

Pipe was shipped to convenient points along the line and hauled to the right of way in the usual manner except it was not necessary to string all the pipe along the ditch. In many places it was found much more convenient to pile the pipe and the welders did their work of joining the lengths of pipe together until as much as 300 feet, in some instances, was ready to move to the ditch. The pipe used was 10-inch 40-pound, which means that 300 feet of this pipe weighed over 6 tons. It was easily handled by two heavy-type tractors equipped with booms.

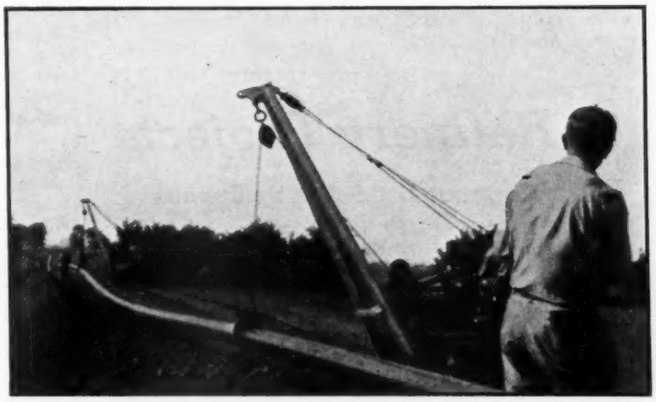
This heavy equipment also permitted the pipe liners to cold bend this pipe to conform to the shape of the ditch. Over and under bends and right- and left-hand curves were put in the pipe with ease and the ability to do this work quickly and accurately without the use of heat materially aided in rushing the work.

Contractors awarded this work were Oklahoma Contracting Corp., Dallas, Tex.; Kelly-Dempsey and Co., and Sheehan Pipe Line Construction Co., Tulsa, and Jones and Brooks, Oklahoma City, Okla. The electric welding was done by H. C. Price and Co., Bartlesville, Okla., and Mattison-Wallack Co., Oklahoma City. Some of the pipe line contractors used their own welding crews. Lewis Brothers Co., Tulsa, supplied much of the heavy equipment needed on this job as well as welding and other supplies.

MAJOR PIPE LINE SYSTEM

The Gulf Pipe Line system is 730 miles long and extends from a point near Jenks, Okla., to Spencerville, Ohio, and is a 10-inch line with a 50-mile long 8-inch branch from Dublin, Ind., to a point west of Cincinnati, Ohio. The line was laid in the latter part of 1930. The original capacity was reported as 36,000 bbls. per day and it is now rated at about 42,000 bbls. daily. While some oil has been pumped through the loops the system has not yet been used to capacity.

There are 12 pump stations along this line each originally powered with two 316-horsepower diesel engines connected through herringbone gears to 6x18-inch horizontal triplex double-acting plunger pumps. In each of these stations one new unit has been added consisting of a 340-horsepower diesel engine direct connected through gears to a 6x18-inch horizontal triplex double-acting plunger pump. The pump station buildings have been increased in size to accommodate these new units.



Moving a 300-foot welded section of 10-inch 40-pound pipe with two heavy-duty tractors on Gulf Pipe Line Co. right of way in Illinois

MID-CONTINENT PURCHASES INCREASED

No new pipe was laid across the four main streams crossed by this pipe line. These rivers are the Arkansas and Grand in Oklahoma, the Mississippi between Missouri and Illinois and the Wabash in Indiana. The highest point on the line is in Missouri at 1,610 feet above sea level and the lowest elevations are about 400 feet above sea level where the line crosses the Mississippi and Wabash Rivers.

Aside from the enlargement of an important transportation system, the Gulf's latest pipe line project has significance in Mid-Continent crude oil and Middle West marketing operations. The Gulf company has increased its purchases of Oklahoma and Kansas crude. It is also understood the company is considering the northbound movement of Texas and Louisiana crudes to connect with the Oklahoma-Ohio trunk line in Oklahoma. This could be accomplished by reversing the company's movement of oil at present running south out of Oklahoma connecting to the Louisiana and Texas systems transporting crude to the Gulf Coast.

The Oklahoma-Ohio line was built to supply three Gulf refineries, located at Toledo and Cincinnati, Ohio, and Pittsburgh, Pa. The Ohio refineries at present have a rated capacity of 25,000 bbls. daily divided equally between the two plants with the Pittsburgh refinery a 10,000-bbl. plant. These plants were built several years ago as the company moved westward from Pennsylvania with its wholesale and retail marketing facilities. It is understood that established outlets have increased to the point where additional refinery capacity is required and the three plants will be enlarged soon. A recent report indicated the daily capacity of the Toledo refinery may be increased to 20,000 bbls.

The Gulf company continues to expand its marketing gradually to the west with national distribution as an objective and now has outlets in Chicago and other large consuming centers in Indiana and Illinois. This development has led to the prediction the company eventually will further enlarge its pipe line system connecting to the Mid-Continent and build refineries at either Indianapolis, Chicago, St. Louis or some other points which are closer to this new trade area than are the Ohio refineries.

At present the Gulf's marketing for all products centers in eastern, southeastern and southwestern states with distribution in the remainder of the United States largely confined to lubricating oils and specialty products.

Natural Gasoline

Production Increased in November

Production of natural gasoline in the United States continued its upward trend in November, according to a report prepared by the Bureau of Mines. The daily average output in November was 5,342,000 gallons compared with an average of 5,189,000 gallons in October and with 5,037,000 gallons in November, 1935.

The principal increases in daily average production were recorded in Louisiana, Kansas and the Texas Panhandle, with some of the leading fields showing declines. East Texas fell from a total monthly production of 12,385,000 gallons in October to 10,925,000 gallons in November. Kettleman Hills declined from 16,208,000 gallons to 15,814,000 gallons in November.

Total production of the various districts for November, in gallons, was as follows: Appalachian, 6,752,000; Illinois, Michigan and Kentucky, 1,109,000; Oklahoma, 37,707,000; Kansas, 3,959,000; Texas, 43,216,000; Louisiana, 9,269,000; Arkansas, 925,000; Rocky Mountain, 6,139,000, and California, 51,196,000.

The proportion of natural gasoline blended in refinery gasoline rose to 8.8 per cent in November, the highest ratio of the year. The increased refinery demand was reflected in stocks which declined from 191,310,000 gallons the first of the month to 174,426,000 gallons on November 30. Stocks at refineries declined from 121,254,000 gallons to 108,738,000 gallons during the month, while stocks at plants and terminals were decreased from 70,056,000 gallons to 65,688,000 gallons.

Shipments of natural gasoline to jobbers and retailers and exports to foreign countries continued at a high level, the total for these two movements being 21,353,000 gallons compared with 21,174,000 gallons in October. Because of the seasonal influences average vapor pressures of natural gasoline sales in November rose to 20.9 from 20.2 in October.

Building Southern Minerals Plant

HOUSTON, Tex.—Construction is well under way on the new natural gasoline plant of the Southern Minerals Corp. in the Saxet field of Nueces County. The plant, capable of processing 25,000,000 to 30,000,000 feet of gas daily, will be supplied by wells in the field producing from the Frio or 5,800-foot sand. The plant, of the absorption type, is located 1½ miles north of Clarkwood, in the heart of the field.

Southern Minerals Corp. will move all natural manufactured in this plant to foreign markets. Facilities for gas gathering and residue lines, and for loading of the product at the Corpus Christi terminal are being added by the company. The contract for construction was let to the Western Supply Co. of Tulsa.

New Bryson Field Plant

FORT WORTH, Tex.—Construction of a gasoline plant to cost in the neighborhood of $150,000 is to be started this week in the new field east of Bryson, Tex., on the W. B. Lowe farm. W. F. Mitchell and associates of Dallas will construct the plant. Contracts have been closed with owners of 75 wells and an additional 25 wells to be contracted will supply the natural gas. Residue gas is to be returned to the field for repressuring.

J. W. Vaiden Appointed Manager

The advancement of James W. Vaiden to the position of manager of the natural gas and natural gasoline division of the production division of Skelly Oil Co. was recently announced. Mr. Vaiden has completed some 12 years with Skelly, coming to Tulsa in 1924.

A native of Alabama, Vaiden completed his college work at Alabama Polytechnical Institute, where he received his B. S. degree in chemical engineering in 1921. Mr. Vaiden had not been with Skelly long before he was made a plant engineer and for the next four years worked in plants at

J. W. VAIDEN

Burbank and Stroud, Okla., and in Coleman and Burkburnett, Tex. He was then transferred to the Wynona plant, in Osage County, Oklahoma, as superintendent; later to Seminole in the same capacity and then to headquarters in Tulsa in 1928. In 1933 when the natural gasoline plants were placed under the control of the production department, Vaiden was placed in charge. He also directs Skelly's manufacture and marketing of Skel-gas and solvents.

Mr. Vaiden is chairman of the technical committee of the Natural Gasoline Association of America.

Refinery Projects

Contract Let for Dixie Refinery

MUSKEGON, Mich.—Contract for the construction of a new 5,500-bbl. crude oil cracking plant to be built and operated by the Dixie Refining Co. at Trenton, Mich., has been let to Arthur G. McKee & Co., Cleveland engineers and contractors. The site upon which the new plant will be erected at a cost of upward of $1,000,000 embraces 102 acres within 1,000 feet of the Detroit River. When originally planned to supply petroleum products for several hundred Dixie distributors throughout Michigan and other middle-western states, it was to have a capacity of 4,000 bbls. of crude daily, later increased to 5,500 bbls. by acceptance of the plan.

The plant will be of modern design to be built and operated as a Dubbs unit under a license from the Universal Oil Products Co. The company recently was formed with an authorized capital of $1,800,000.

It will be connected with water terminal facilities on the Detroit River by existing oil and water lines and will have docking space for loading or unloading tankers with a capacity of 1,000,000 gallons. Construction will be started soon with completion scheduled for the latter part of 1937.

Leonard Unit Nearing Completion

MUSKEGON, Mich.—Leonard Refineries, Inc., of Alma, soon will be ready to go on stream with a new 1,500-bbl. Dubbs cracking unit installed to handle either Michigan or Mid-Continent crude, or a blend. It will be Michigan's fifth cracking unit. The company is one of five which last year negotiated for the purchase of Mid-Continent crude oil to supplement declining supplies of Michigan crude.

Sherwood Making Additions

OIL CITY, Pa.—Sherwood Refining Co. has now completed its new office building and laboratory at its Warren, Pa., refinery and is making a large addition to the filter house. In the near future a new barrel house will also be erected and new boilers installed.

Oil Company Organized

TORONTO, Ontario.—D. A. Stuart Oil Co. has been organized under Ontario charter with head office at Toronto to take over the assets and business of D. A. Stuart & Co. The firm, founded in Illinois 71 years ago, operates in the United States and Canada, manufacturing industrial lubricants for extreme friction. Directors are: Harold A. Greene, Robert A. Bryce, E. G. McMillan, T. B. Langdon, H. M. Millar, Wm. H. Oldacre.

Natural Gas

New York-Pennsylvania Gas

COUDERSPORT, Pa.—Two wells were completed in the deep sand New York-Pennsylvania gas fields in the week ended January 15. Moss Snydicate completed its well on the Thomas E. Moss farm in Howard Township, Steuben County, New York, at a total depth of 3,600 feet. It gauged 200,000 feet. Belmont Quadrangle Drilling Co. well on the L. Washburn farm, Catherine Township, Schuyler County, New York, failed to find Oriskany and was abandoned at 2,142 feet. Onondaga was found at 1,986-2,043 feet.

Two new locations were reported in Pennsylvania, one in Crawford County, where Potter Development Co. is moving on the J. Chapin farm, Rockdale Township. The company is also digging cellar 900 feet from the north line and 500 feet from the west line of the H. C. Kemp farm in Farmington Township, Tioga County. Seven operations are underway in Potter County, most of them in or about the Ellisburg and Harrison fields.

Two new locations were reported in New York state. There are only three deep sand wells now drilling in New York but seven others will be under way soon. In Cattaraugus County, Cunningham Natural Gas Co. is moving on the H Hotchkiss farm in Randolph Township. In Schuyler County, Belmont Quadrangle Drilling Co. has staked location on the Federal Bank property in Dix Township.

Awarded for Helium Research

CHICAGO.—The Washington award commission has announced the selection of Dr. Fredrick G. Cottrell, perfecter of a process for cheap production of helium gas, as recipient of its 1937 engineering award. The commission said Doctor Cottrell's research had reduced helium gas cost from $1,700 to 10 cents per foot. Doctor Cottrell has gained recognition for his work in nitrogen fixation, for his processes of cleaning gases of dust and dirt by electrical precipitation, and for research in petroleum technology. He becomes the fourteenth American engineer to receive the award since it was founded in 1916.

Pipe Line Activity

Southwest Texas Line

HOUSTON, Tex. — Completion of the 85-mile pipe line of Magnolia Pipe Line Co. in Southwest Texas is expected some time next month. The line is being laid from the Magnolia booster station at Tilden, McMullen County, to a deep water terminal at Corpus Christi. At Tilden, the line joins the Magnolia trunk line which serves the major fields of the Laredo district, and will offer outlet direct to deep water. The trunk line runs northeast to Luling and thence to Beaumont.

The line is of 8-inch welded construction. The pump station at Tilden will handle the movement of oil through the new line upon its completion, with no intermediate stations planned for immediate installation. Mitchell Construction Co. of Dallas has the contract.

Pipe Line Contracts

Phillips Petroleum Co. is asking for bids upon laying about 200,000 feet of from 4 to 20-inch pipe for gas gathering lines in the Eunice field, New Mexico, to deliver gas to the natural gasoline plant at Eunice.

Apex Construction Co., Houston, Tex., is laying 20 miles of 8-inch 26-pound pipe line to deliver oil from the tank farm of Stanolind Oil & Gas Co. near Webster Junction, Harris County, Texas, to the Pan American refinery at Texas City, Tex.

Apex Construction Co., Houston, Texas, is laying 70 miles of 10-inch gas line from Beaumont, Tex., to the refinery of Humble Oil & Refining Co. at Baytown, Tex. This company is also laying about 66 miles of from 3½- to 16-inch gas gathering lines in the Tomball field north of Houston, Tex.

Williams Brothers Corp., Tulsa, has contract from Continental Oil Co. of Ponca City, Okla., to build a 6-inch pipe line from a point north of Guthrie, Okla., to the Crescent oil field. This is a welded line and now under construction. This company has also let to the same contractor a 4-inch gravity and field line in the Orlando field, Oklahoma.

Williams Brothers Corp. has moved headquarters from the fourth to the third floor of the Exchange Bank Building, Tulsa.

Michigan Oil Lines

MUSKEGON, Mich.—Pure Transportation Co., major purchaser of Michigan crude oil, last week announced plans for immediate construction of a gathering system to serve the Buckeye Township, Gladwin County, field just opened.

David E. Beach, Michigan general superintendent, said Pure has closed contracts with several companies holding large acreage although Pure Oil Co., an affiliate, has no direct interest in the field.

Simrall Pipe Line Co. recently completed an extension from the original Beaverton field to the new Oard and State No. 1 wells in Buckeye Township.

Pure Transportation Co. also is completing a direct line 13 miles long from the new Sherman Township field in Isabella County to Mount Pleasant. Simrall recently extended its West Branch, Ogemaw, system to the new Clayton Township, Arenac County, pool to move crude to a loading rack at Prescott whence shipments will be made by tankcar. Officials indicate eventually a line may be extended direct to storage tanks and loading wharves at Bay City, a distance of 35 miles.

Phillips Gas Line

FORT WORTH, Tex.—Phillips Petroleum Co. is planning to lay a new 30-mile 24-inch gas line from its sour gas field in Moore County, Texas Panhandle, to its Rock Creek casinghead gasoline plant in Hutchinson County, this line being part of a trunk system which will supply all of the Phillips Petroleum Co. gasoline plants south of the Canadian River in Hutchinson County.

Phillips Petroleum Co. is also joint owner with United Carbon Co. in a new carbon black plant now under construction in section 147, Block 3-T, T.&N.O. Survey, in Moore County. This plant is to have a daily gas burning capacity of 30,000,000 feet, utilizing the residue gas from the Phillips and Sunray gasoline plants and one to be erected in this area by Magnolia Petroleum Co.

Rice County Outlet

Sinclair-Prairie Pipe Line Co. is building a line into the Hauschild and Saxman pools of Rice County, Kansas. A 6-inch line is to be laid from the trunk line, 5 miles north, to a site for a pumping station on the Snyder lease of Garden & Haines, the SE of section 9-27-7w.

Sinclair-Prairie company has an 8-inch main line running west from the Voshell pool in McPherson County to the Raymond pool in southwest Rice County with other connections along the route.

White Eagle and Skelly companies have lines to the field.

Work in Progress

While there are no major pipe line projects under way there are many short lines being laid or pipe taken up for reclamation and further use. There are rumors of several large gas lines to be laid this year but confirmation of these projects is lacking. Some of the small jobs either now under way or about ready to start are:

Northern Natural Gas Co., Omaha, Neb., is looping 20 miles of its line in northern Kansas with 20-inch pipe.

Phillips Petroleum Co. is laying about 60 miles of gas gathering line in New Mexico and northern Texas to deliver gas to the Hobbs, N. Mex., gasoline plant. These lines vary in size from 3 to 20 inches. About 15 miles of the gathering system is in West Texas and the balance in southeastern New Mexico.

Gulf Pipe Line Co. is extending the gathering system from pump station at the terminal of line in the Monument field, Lea County, New Mexico. This line is about 10 miles long and 10 inches in diameter. From this line connections will be made to Gulf Oil Co. and other wells in the Monument field.

Sinclair-Prairie Pipe Line Co. recently completed the taking up of about 40 miles of 6-inch pipe from its old line south of the Creek station near Jenks, Okla. This pipe has been reconditioned and placed in warehouse yard.

Sinclair-Prairie Pipe Line Co. is laying about 20 miles of 6-inch welded line from its Fitts pool station to the junction at Nella on the main line in the Seminole district, Oklahoma. This line will give outlet to additional oil from the Fitts pool to eastern purchasers.

Starr County Line

BROWNSVILLE, Tex.—Charles F. Urschel is interested in the pipe line project from fields in the upper valley to deep water here, according to announcement by F. (Dee) Davenport of Mission, who applied for permit to use the county right of way for the line.

Messrs. Urschel and Davenport jointly control the 14,800-acre tract in central Starr County on which the Davenport-Urschel well was brought in.. Mr. Davenport has 110,000 acres under lease in Starr, Cameron and Hidalgo, including the 14,800-acre tract in Starr County which he holds jointly with Mr. Urschel.

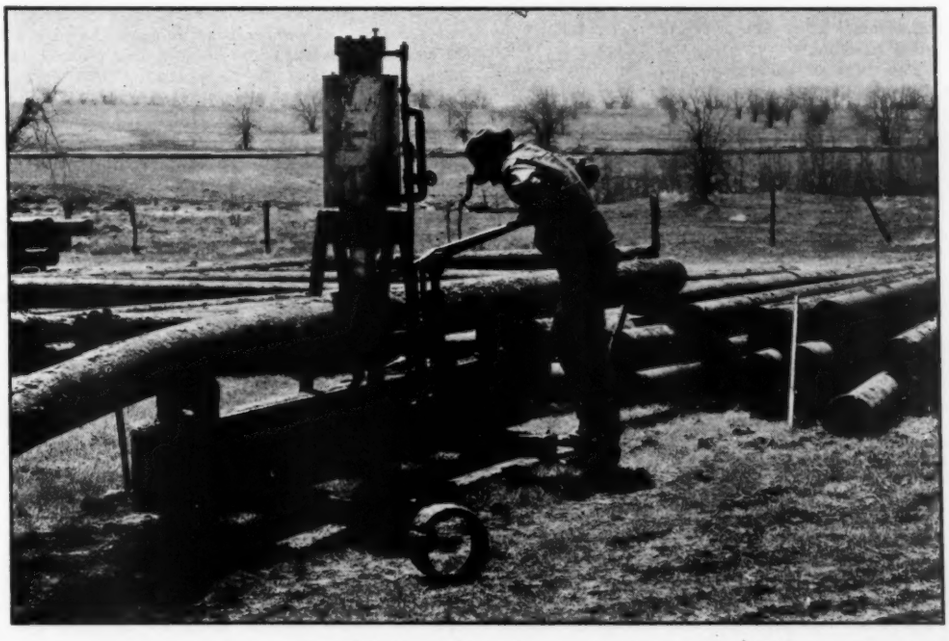
According to Mr. Davenport the proposed line will originate on the Slick ranch in Starr County, thence to Monte Carlo, the Engelman tract, the Mercedes field, and on to the coast.

Longview-Rodessa

Through its Longview-Rodessa pipe line, United Gas Public Service Co. is delivering, effective January 1, 7,500 bbls. daily to Atlantic Refining Co. and 4,000 bbls. daily to Shell Petroleum Corp. They continue to deliver 2,000 bbls. daily to East Texas Refining Co. at Longview as in the past.

Bow Island Repressuring

CALGARY, Alberta.—Approximately 9,000,000,000 feet of waste gas from the Turner Valley field has been stored in the exhausted sands of the Bow Island field since repressuring operations were begun in August, 1930, by Canadian Western Natural Gas, Light, Heat & Power Co. The company's original pipe line from Bow Island was utilized. When repressuring started the pressure in the field was 248 pounds to the square inch, and it has since increased to between 550 and 560 pounds.



Straightening old pipe by man power

TEXAS PRORATION LAWS TO BE EXTENDED BY LEGISLATURE

AUSTIN, Tex.—With all present oil and gas proration laws of Texas due to expire by limitation September 1, the legislature which convened January 12 is faced with the need of re-enacting and extending these laws or passing legislation to supplant them. Failure to do this will result in the state's entire program of proration and production control being overthrown automatically.

Among most oil men of Texas very little consideration is given to the possibility any such situation will come about. It is generally believed the present proration laws will be re-enacted. A bill already has been introduced by Representative George Davisson of Eastland providing for extension of the present laws until September 1, 1941.

However, it is possible stiff opposition may arise. Representative Harry Graves, of Georgetown, sponsor of the laws passed four years ago, now is attacking the present proration program as having been unfair to the small independent. He is a close friend of Governor James V. Allred, but the governor has not voiced his opinions.

The provision which defines as waste the production of oil in excess of transportation or market facilities or reasonable market demand has been one of the most vital and effective phases in the control of production. The "Railroad Commission is authorized to determine when such excess production exists, or is imminent, and to ascertain the reasonable market demand." The commission is given authority to determine the allowable production from any common source of supply, which shall be the reasonable market demand which can be produced without waste, and to allocate, distribute, or apportion the allowable production among the various producers on a reasonable basis.

Formerly spacing of wells could be restricted only to the provisions of Rule 37, which stated that wells could not be located closer than 150 feet from a lease line or 300 feet from another well. Under present laws, wider spacing can be enforced if waste, physical or otherwise, is created by closer drilling.

In a bill which has been introduced by Representative Graves, limitation of the power of the Railroad Commission in prohibiting drilling of small tracts is sought. While exceptions to spacing rules have been made for drilling small tracts, existence of which was effective before promulgation of spacing rules, drilling has been restricted on small tracts in which sub-divisions have been made since spacing rules have gone into effect. The Graves bill seeks to prevent the commission from adopting or enforcing any rules to prevent drilling on a small tract because it had been subdivided or partitioned, unless it could be shown the subdivision or partitioning was made to evade the regulations.

Oil men generally are of opinion any opposition to extension of the proration laws will be largely political.

ETHYL GASOLINE INCREASE IS DOUBLE GASOLINE GAIN

Consumption of leaded gasoline reached the record of 13,335,000,000 gallons during 1936, according to Ethyl Gasoline Corp. This exceeds 1935 by 1,317,000,000 gallons.

Use of Ethyl, or premium, gasoline showed a gain of 26 per cent, rate of increase being more than double that of all gasoline sold in the United States. Total gasoline sales are estimated at 19,000,000,000 gallons, an increase of 10 per cent.

Of the consumption of leaded motor fuel, 780,000,000 gallons were Ethyl gasoline and 12,555,000,000 gallons were "Q" gasoline, or regular gasoline containing lead. The gain in the latter classification was 10 per cent.

More than 70 per cent of all gasoline used by motorists contains lead. Seventy-five per cent of the total sales of more than 100 refining companies marketing Ethyl as licensees consist of leaded gasoline.

The biggest percentage gain in the use of Ethyl gasoline was reported by the Los Angeles division, 58 per cent. The second most striking gain occurred in the Chicago division, 26 per cent. The New York division showed an increase of 23 per cent. The Boston division also reported an increase of 23 per cent.

A gain of 19 per cent was made by the Tulsa division, comprising Texas, Louisiana, Arkansas, Oklahoma and New Mexico. Sales advanced 18 per cent in the Baltimore division. The Kansas City division reported a gain of 17 per cent.

Reports from managers throughout the United States and Canada indicate the upward trend will continue in 1937.

The annual convention and exposition of the Kansas Oil Men's association will be held at Broadview Hotel in Wichita on February 15 and 16.

Robert S. Kerr, president of A. and K. Petroleum Co., Oklahoma City, Okla., announces R. H. Lynn and Dean A. McGee, former Phillips Petroleum Co. executives at Bartlesville, Okla., will become A. and K. executives February 1; Lynn as executive vice president and McGee in charge of a newly-created geological department.

THE MARKETS*

CRUDE OIL: *A new peak in national production finds crude markets unchanged. Prices firm with active solicitation of connections as new wells are completed. Continental Oil Co. continues to pay posted schedules made effective January 4 which are 17 cents per barrel higher than general schedules in Mid-Continent and Rocky Mountain states.*

REFINERY: *Seasonal decline in gasoline demand with prices slightly lower in several refining areas. Kerosene and all burning oils generally strong. Strikes slow up demand for industrial fuels but prices continue firm. Natural gasolines advance from recent lows in Mid-Continent. Lubricants firm.*

TANK-WAGON AND SERVICE STATION: *No important changes in gasoline quotations. Kerosene prices advanced in several states.*

FINANCIAL: *Advances of previous week in most cases maintained with reduced volume. Average of 30 representative stocks for week ending January 16: High, 42.98; low, 41.23; close, 42.15. Week ending January 9: High, 42.97; low, 40.45; close, 42.15.*

*Detailed information in Market Section.

REFINING COMMITTEES APPOINTED

R. E. Haylett, of Union Oil Co. of California, Los Angeles, has been appointed chairman for 1937 of the Central Committee on Refinery Technology of the American Petroleum Institute's Division of Refining. J. B. Rather, Socony-Vacuum Oil Co., New York, has been appointed 1937 chairman of the division's program committee. The appointments were made by Institute Vice President for Refining, W. S. S. Rodgers, Texas Co., New York, chairman of the divisional General Committee.

Chairman Haylett has announced the appointment of 1937 chairmen of several topical committees of the Central Committee on Refinery Technology. They follow:

Automotive Survey Committee, E. W. Isom, Sinclair Refining Co., New York; Committee on Accident Prevention in Refineries, Glenn Byers, Shell Petroleum Corp., St. Louis, Mo.; Committee on Corrosion of Refinery Equipment, Walter Samans, Atlantic Refining Co., Philadelphia, Pa.; Committee on Disposal of Refinery Wastes, John S. Hess, Sinclair Refining Co., New York; Committee on Fire Prevention in Refineries, C. E. Townsend, Sun Oil Co., Philadelphia, Pa.; Committee on Motor Fuel Research, T. B. Rendel, Shell Petroleum Corp., Wood River, Ill.; Committee on Standardization of Refinery Equipment, Arthur E. Pew, Jr., Sun Oil Co., Philadelphia, Pa.; and Committee on Testing Methods and Specifications, K. G. Mackenzie, Texas Co., New York.

NEWS NOTES

Louis M. Faber, Jr., was reelected president of the Retail Gasoline Dealers' Association of Milwaukee, Inc., for the fourth consecutive term.

The Robinson-Patman Act will be discussed by George A. Renard, executive secretary of the National Association of Purchasing Agents, in Tulsa January 25.

The Mid-Continent Petroleum Safety Council will meet in Tulsa January 25 for the first session of 1937. The last gathering was at Wichita, Kan., November 17.

It is expected a chain store tax bill will be introduced in the legislature of Arkansas, but it will not be similar to the Iowa bill in placing gasoline stations under chain store classification.

A sound film, "The San Francisco Bay Bridge," and a talk, "Little Signal Hill," was presented January 19, at the Taft Union High School Auditorium, by the San Joaquin Valley chapter of the American Petroleum Institute. Lot Bowen, Western Gulf Oil Co., Bakersfield, is chairman.

The Fourteenth National Oil Burner and Air Conditioning Exposition will be held at Philadelphia March 15 to 19. G. Harvey Porter, managing director of the Oil Burner Institute and of the show, reports 70 per cent of the available floor space at Convention Hall taken.

ALLRED ASKS INCREASED TAX ON OIL AND OIL PIPE LINES

In his message to the Texas legislature, Governor J. A. Allred said:

"For years the legislature has enacted practically every conservation statute and enforcement measure desired by the oil industry; not only to prevent waste but to make the business profitable and prosperous. I think an industry that has asked and received such consideration at the hands of the law-making body and which no doubt will ask its help again, should not object to a substantial increase in the tax on oil.

"Representatives of oil pipe line companies oppose an increase in the franchise tax, and say we ought to have a general sales tax to make the average man 'tax-conscious' and make him appreciate his government. I think they ought to show appreciation to the government of the state which has probably contributed more to their prosperity than any other in the union by agreeing to the levy of a fair franchise tax."

An occupation tax of 10 cents per barrel on oil, or 10 per cent of market value when in excess of $1 per barrel, was advocated by Representative Jasper Reed of Texarkana, in which one-fourth of the revenue would go to the public school fund and the remainder to old age pensions.

Clarence E. Farmer of Fort Worth coupled it with a pension liberalization bill. Farmer's bill also proposed a tax of 1 cent per 1,000 feet on natural gas production.

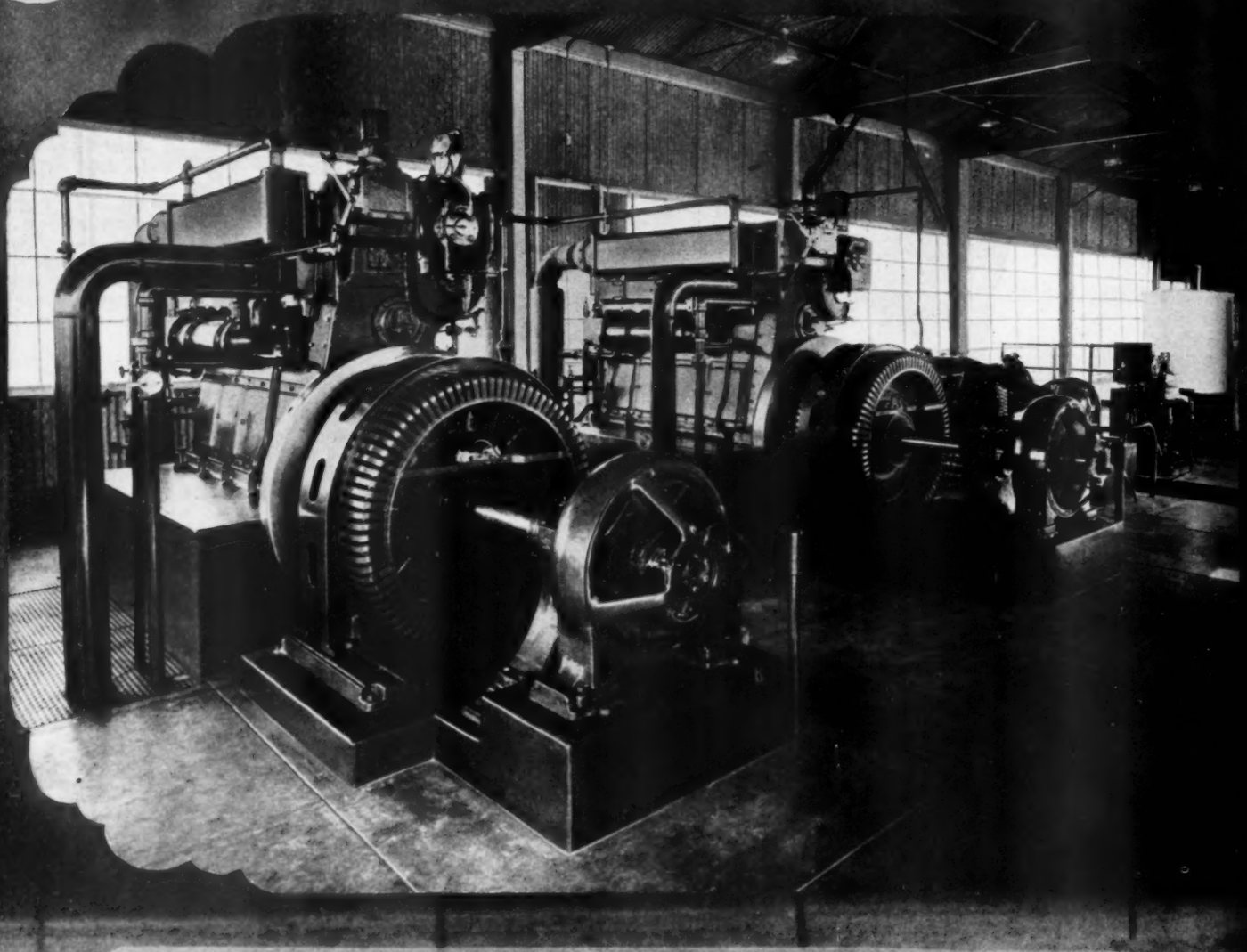
LINE UP WITH TUBE-TURNS!★

TO MAKE a good, strong joint, welding fittings must line up *exactly* with both the inside and outside diameter of the pipe . . . Welding fittings must be lined up with the pipe from the outside. Fittings with non-uniform walls may match either the I. D. or the O. D. of the pipe. They *can't match both.* If they match only in O. D., a shoulder is formed on the inside, restricting flow and accelerating corrosion. If they match only in I. D., correct alignment is extremely difficult and erection is slowed up. ¶ Tube-Turns line up perfectly with the pipe—*match* it at *all* points . . . Result: Low welding costs, strong joints, minimum pressure-loss, long life . . . That's why more people *line up with Tube-Turns* than with any other fittings for pipe welding.

¶ Tube-Turns, *Incorporated,*
Herald-Post Building,
Louisville, Ky.

★ **The word "Tube-Turn" is NOT a general name for welding fittings. Tube-Turns are THE seamless fittings having uniform wall-thickness at all points, true circular cross-section, uniform radius of curvature and smooth inner walls. Made ONLY by Tube-Turns, Incorporated.**

Dust Dust

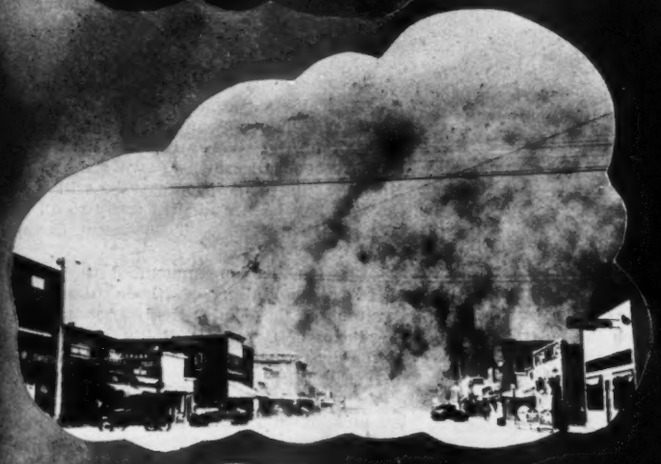


Panhandle-Eastern's Type GN-4 generator sets are just as RELIABLE as the Cooper-Bessemer 1300 Horsepower main units. These two auxiliary sets at Haven, Kansas, are each rated at 200 Horsepower at 400 r. p. m.

THE COOPER-BESSEMER CORPORATION

Mt. Vernon, Ohio — PLANTS — Grove City, Pennsylvania

EVERYWHERE



...BUT THE ENGINES MUST *Keep on Running!*

Oceans of black dust turning day into night . . . sweeping along at a mile a minute! That's where Cooper-Bessemer RELIABILITY meets the supreme test!

A striking example is the country along the Panhandle-Eastern line. Even when the dust drives women and children away . . . the Engines MUST GO ON — because Detroit must have gas!

Cooper-Bessemer main and auxiliary power *has to operate* under such conditions.

25 West 43rd Street, New York City
Mills Building, Washington, D. C.
640 East 61st Street, Los Angeles, Calif.
201 East 1st Street, Tulsa, Oklahoma
631 Spring Street, Shreveport, La.
Magnolia Building, Dallas, Texas
53 Duncan Street, Gloucester, Mass.
Esperson Building, Houston, Texas

Extension of Connally "Hot" Oil Law by Congress Is Assured

By HENRY D. RALPH

WASHINGTON, D. C.—Reorganization of the federal government is the "big story" in Washington just now and will be for a long time to come. To business as a whole, of course, it makes little difference how the government is organized. What business wants is, first, economy, to reduce the overall tax burden, and, second, efficiency, to eliminate red tape, delay, and annoyance in dealing with the government. In so far as these two ends are served the ordinary business man is concerned with the current discussion of reorganization.

Meanwhile the oil industry is directly interested in government extension of the Connally "hot" oil law as provided in the bill (S. 709) introduced January 14 by Senator Tom Connally of Texas. Its passage is quite certain in spite of opposition which will be raised in certain quarters. Unless extended it would expire in June. The bill was attacked in a statement by the National Oil Marketers' Association which also condemned the Interstate Oil Compact and the gasoline consumption forecasts of the Bureau of Mines. This statement described the three measures as "the chain of federal aid to oil monopoly," which has "placed the federal government in the business of aiding the major integrated oil companies, the producers of crude oil and the oil producing states in curtailing the production of crude oil below market demand, thus holding the price above ordinary competitive levels and exacting tribute at the expense of the public and the independent oil marketers."

A bill to continue and expand the taxes on imported petroleum and products beyond the expiration date of June 30 has been introduced by Representative Morgan Sanders of Texas. It would increase the tax of one-half cent per gallon on imported crude petroleum and fuel and gas oil to one cent; continue the present taxes of 2½ cents per gallon on imported motor fuel, 4 cents per gallon on imported lubricating oil, and 1 cent per pound on imported paraffin and other petroleum waxes; add a new tax of $2.00 per ton on imported asphalt; and deny exemption from these taxes to supplies for ships.

CODE OF ETHICS

The Federal Trade Commission made public an order directing that interested parties be given an opportunity to present their views in writing, filed before February 1, as to whether the commission should formally rescind its approval and acceptance of the trade practice rules for the petroleum and petroleum products industry as published on August 10, 1931.

The rules were superseded by the oil code, August 19, 1933. Since invalidation of the NRA industry groups in various parts of the country took steps to formulate new marketing rules to be established under the auspices of the Federal Trade Commission. Application for approval of these new marketing rules, on behalf of the entire industry east of the Rocky Mountains, has recently been received by the commission for consideration and action under its trade practice conference procedure.

It was made plain by the commission that formal rescission of its approval of the old rules of August 10, 1931, would in no way interfere with proceedings on the new application, and that before any new rules are approved or accepted by the commission, full opportunity would be accorded to all interested persons to present their views thereon.

REORGANIZATION PLANS

There is much talk about conflict between the president and congress on reorganization, and there is a great deal of misunderstanding. Last spring a special senate committee headed by Senator Harry F. Byrd of Virginia employed the Brookings Institute to make a study of savings which might be made through consolidation of government bureaus. At the same time President Roosevelt appointed another group, headed by Louis Brownlow, to recommend improvements in administrative management. The groups approached the matter from different angles and for different purposes, and there need be no serious conflicts between their proposals since the plans are not mutually exclusive.

The Brownlow report holds out no hope for immediate savings to the taxpayer, but through improved efficiency it is probable the ultimate savings would be substantial.

The Byrd committee, on the other hand, is interested in immediate savings, even at the sacrifice of many functions which the federal government has been performing in recent years, and is less concerned with the objective view of the executive operation of the government taken by the Brownlow committee.

RESOURCES BOARD

Of particular interest to the oil industry is a recommendation in the Brownlow report that the national resources board be made permanent and have enlarged powers and ample staff. It would function as a direct arm of the president to guide him and other divisions of the executive branch in long-range economic planning and in preventing conflicts in the policies of various departments. The board would by no means confine its activities to physical resources such as oil, coal, and forests, but would serve as a clearing house for all government policies dealing with social and economic matters. The board and its staff would be supposed to keep an objective, impartial view, balancing special interests against the general welfare. Such a board would examine the gasoline consumption forecasts made by the Bureau of Mines, the utility program of the TVA, the work of the Bituminous Coal Commission, and government activities having a bearing on fuel and power, and would attempt to correlate them into a single and balanced national policy and keep them from working at cross purposes.

Of no less interest is the proposal to place the regulatory commissions under cabinet officers for administrative purposes. Such bodies as the Interstate Commerce Commission, Federal Trade Commission, Securities and Exchange Commission, and Federal Power Commission are now entirely independent of the president or any cabinet department, and operate as arms of congress to perform quassi-legislative and quassi-judicial functions. The Brownlow proposal is to retain these commissions intact as far as their legislative and judicial work is concerned but to make all their operating, administration, and investigating work a part of the departments.

Issues of great importance to the oil and every other industry hang in the balance as negotiations begin in the General Motors strike. The sit-down strikers have agreed to abandon the plants as the first step in negotiation, and if this becomes a precedent it is of great importance, for by the "sit-down" technique a small minority in any plant can stop production and keep the majority of employees from working. This is a powerful and probably illegal weapon, and if it should become recognized as accepted union practice it might disrupt any machinery for settling labor disputes which could be devised.

WALSH-HEALEY ACT

The quarterly report on the operations of the Walsh-Healey government contracts act released by Miss Frances Perkins, Secretary of Labor, revealed that the act has been applied to less than 15 per cent of all contracts awarded and prompted Miss Perkins to declare that she will recommend that the law be extended to apply to all contracts of more than $2,000. The present exemption is $10,000.

Miss Perkins has announced the appointment of Lawrence Walling of Rhode Island as administrator of the Walsh-Healy Act to take over the duties of Gerard D. Reilly, assistant solicitor of the department of labor, who has been serving as acting director of the government contracts section. Mr. Walling has been commissioner of labor and industry in Rhode Island.

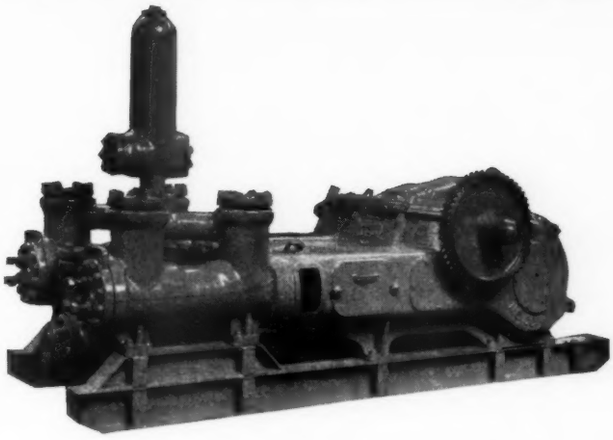
Petroleum products constitute approximately 20 per cent of all contracts covered by the Walsh-Healey law, and about 90 per cent of all the oil contracts were let by the navy department for itself and the other government agencies for which it purchases. The navy department opposed enactment of the law and later applied to Miss Perkins for an exemption, which was denied, but apparently is having no great difficulty securing bids from petroleum companies willing to place their employes under the provisions of the law.

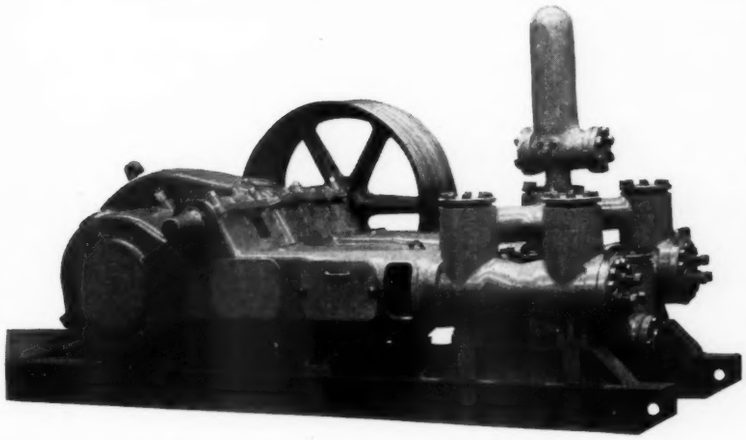
OIL POLLUTION

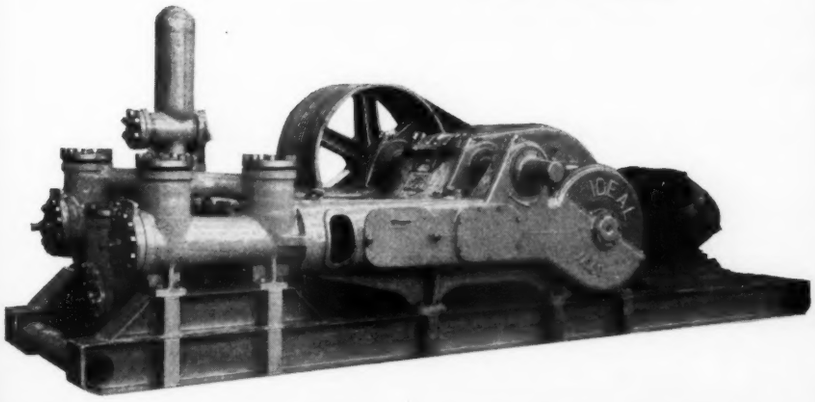
Several bills to control stream pollution have been introduced. Senator Lonergan of Connecticut has two bills virtually the same as he sponsored in the last congress, while others have been drafted by Senator Alben Barkley of Kentucky and Representative Fred Vinson of Kentucky.

One Lonergan bill, S.15, would amend the oil pollution act of 1924 by making it applicable to any waste material washed into a navigable stream or its tributary from any refinery or plant by reason of fire, flood, storm, or high tide. The other bill, S-13, would make the national resources committee a permanent agency to control stream pollution with power to set standards for the purity of navigable waters and their tributaries and to determine the amount of waste which any industrial plant or city sewerage system could deposit.

The Barkley-Vinson bill, identical in both Houses, would create a division of water pollution in the Public Health Service to cooperate with the states in eliminating or reducing pollution in line with recommendations of the National Resources Board.







IDEAL

"Reg. U. S. Pat. Off."

POWER DRIVEN SLUSH PUMPS

. . . . a series of pumps, with power and fluid end capable of rendering the same service as equivalent size steam pumps . . . that meet the full requirements of faster and deeper drilling and higher pressures.

Bulletins descriptive of these pumps are available upon request.

Model No.	Maximum Liner Size	Stroke	Maximum Working Pressure	Rated Speed	Rated H. P.	Weight
C150	6¾	12	2000	65	150	17000
C250	7¼	15	2500	60	250	28975
C350	7¾	18	3000	55	350	36400

THE NATIONAL SUPPLY COMPANY OF DELAWARE

National

NSCO
"REG. U. S. PAT. OFF"

Dubbscracking dividends

Oil industry profits in 1936 were very fair considering the average for all industries, Mr Farish* said, but they were not evenly distributed, being for the most part confined to production and transportation operations—
NATIONAL PETROLEUM NEWS *December 23, 1936*

There were profits in refining operations, too, in 1936—some operations

Skimming plants and near cracking plants did well just to get by

But Dubbscracking earned profits that meant dividends to refinery stockholders, bonuses to refinery workers and special rewards to refinery managers who were wise enough to put it in

1937 is a year of promise for Dubbs refiners because more cars will need more gasoline and better gasoline, high anti-knock gasoline

Dubbscracked gasoline

**W S Farish, Chairman of the Board, Standard Oil Co of New Jersey*

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

1937 DRILLING OPERATIONS

(Continued from Page 9)

clining at a rapid rate and with few outstanding discoveries in the past two years, Oklahoma operators are expected to intensify their search for new reserves in 1937.

Despite several disappointments of the past year, southern and southwestern Oklahoma will be a favorite field of exploration. The search for the deep pay uncovered by Carter Oil Co. and others' well in the old Fox field of Carter County will continue. One deep test a short distance west of the Fox strike, drilled by Gulf Oil Corp. and others, recently was abandoned as a failure, but operators would not be deterred and Carter Oil Co. and associates are preparing to drill another deep test just across the line in Stephens County, west of Fox. A deep test drilled by Ed Parsons and others in northern Stephens County, near Marlow, is being abandoned, but operators have tentatively announced another a short distance away. Results of these two deep operations may have considerable bearing on future developments in these areas.

Although recent deep tests have failed to uncover anything to get excited over in Marshall, Love and Jefferson counties, these areas may get additional exploration this year. This is especially true of the Stockton area of Love County, where Sinclair Prairie Oil Co. has a small producer on its big block. Gulf Oil Corp., most active operator in Jackson County, is expected to do considerable drilling in the Tipton and Altus areas. Indian Territory Illuminating Oil Co. and others now are trying to complete a wildcat as a producer south of Frederick, in Tillman County, and that area is due for much more exploration.

Many observers believe southern Caddo County will be one of the busier areas this year. There already is considerable activity in the Cement field, where Ohio Oil Co. recently found deep production, and where Ray Stephens, Wasteka Oil Co., Ramsey Petroleum Co. and others are drilling. Much of the southern part of Caddo County is leased. Grady, Kiowa, Cotton, Comanche, Harmon, Greer, Beckham and Washita counties also are due for considerable exploration, there having been much leasing activity in these counties.

Northwestern Oklahoma still is a "no man's land," but the recent Viola lime strike of Olson Oil Co., in Clark County, Kansas, bounding Harper County, Oklahoma, on the north has encouraged the outlook for that part of the Sooner State.

There has been much leasing in northwestern Oklahoma as a result of that strike, Sinclair Prairie Oil Co. and others leasing in Harper and neighboring counties. Several wildcat tests are projected for northwestern Oklahoma.

Southeastern Oklahoma is another enigma, but despite numerous failures, many oil men, geologists and others believe some considerable pools may yet be found in that sector. Wildcats now drilling in Latimer and Choctaw counties are closely watched. Should these, or other wildcats uncover production, drilling activity in that section will be given new life.

The big play of 1936 is expected to be continued in Coal County this year, although results to date have been disappointing. Shell Petroleum Corp., Continental Oil Co., Carter Oil Co. and others holding acreage in Coal County are due to continue their quest along the trend south and east from Fitts.

Wildcatting will continue in the central and northern part of the state, along the Nemeha trend. Work is just getting under way at a key wildcat in northwestern Kay County, one-half mile south of the Kansas line, where Ritz Oil & Gas Co. and Olson Oil Co. are seeking Wilcox sand production. Exploration is due to continue in Garvin and McLean counties, in Logan, Noble, Payne, Garfield and Osage counties, among others. Canadian County also is due for exploration, H. R. Johnson of Tulsa and associates having assembled a block of leases northeast of El Reno, where a deep test is planned.

The intensive work of the year, however, will be in the Fitts field of Pontotoc County, as operators seek to develop and extend the numerous producing horizons; the Olympic area of Hughes and Okfuskee counties, especially in the latter; in the greater Seminole area, and the St. Louis district of Pottawatomie County, where much of the work will be in the nature of deepening, plugging back and reconditioning old wells; in the Oklahoma City field, where more state land is to be opened and several locations in the Capitol extension area are yet to be drilled; and in the Cleveland pool, Moore County; Crescent field, Logan County; Lucien area, Noble County; Billings area, Noble County; Burbank, Naval Reserve and other Osage County areas. Lincoln County, where some new areas recently have been opened, also is due for considerable work, as are the old and shallow fields of northeastern Oklahoma.

SOUTHWEST TEXAS

Although operators in Southwest Texas will carry out increased drilling programs in many sections during 1937, total volume of drilling is not expected to show gains comparable with the increases in the past two years. The record of completions established in 1935 and 1936 was brought about mainly by drilling large fields in the Laredo district, Government Wells, Loma Novia, Seven Sisters and Lopez, and at present few proven areas show indications of supporting such intensve drilling.

The center of activity is expected to remain in the Lower Coastal area, particularly Nueces County, where Saxet and Flour Bluff will account for large scale operations. However, unless other large fields producing from shallow depths such as in Duval and Webb counties, are opened shortly, drilling in proven areas may show a decline.

Wildcatting, on the other hand, is showing every indication of continuing to gain, with leasing and surveying at a high point. Almost every county of Southwest Texas will be the scene of wildcatting. The Lower Coastal area, from Aransas County to the Rio Grande River will see considerable activity, with prospects good for the opening of production in the prolific sands of the district.

Interest is reviving also in the Fault Line Zone, and both operators of experience in the area, and outside interests are reported planning tests. Wildcatting, which has featured the Laredo district for many years, will probably continue to increase, as prospects are opened in Zapata, Webb and Duval counties.

The Lower Rio Grande Valley is due to see the greatest drilling of its history as indicated by leasing in four counties near the border throughout the last half of 1936. The area will continue to see more deep tests such as those which have opened Mercedes, La Sal Vieja and Mestanas in Hidalgo and Willacy counties.

HARVEY C. FREMMING

President of the Association of Oil Field, Gas Well and Refinery Workers.—(Acme)

In the Edwards Plateau section, expected activity accompanying expiration of 10-year leases may bring a revival of drilling, although no indications are yet seen. A small number of tests drilled during 1936 encountered difficult drilling compared with operations in other Southwest Texas areas, and no important discoveries.

With wildcatting almost certain to continue increasing, the volume of drilling in proven areas depends in a large part on discoveries during the first few months of 1937. Operations are declining in the Loma Novia, Seven Sisters and Lopez fields of the Laredo district with drilling up of proven acreage. These fields accounted for a major part of the drilling during 1936.

The Saxet field of Nueces County shows indications of sustained drilling for some time. For several months the most active area in Southwest Texas, Saxet has continued to hold that place through discovery of new producing horizons. At present the 5,800-foot, or Frio, sand, the most rapidly developed horizon, is approaching decline in drilling activity, but two deeper sands recently opened may be extended.

Flour Bluff, most important new discovery in Southwest Texas during 1936, shows indications of becoming a major field, but drilling will proceed in orderly fashion, due to holding of large blocks by three companies, almost to exclusion of other operators.

The drilling boom which resulted in overdrilling of the Corpus Christi or Saxet Heights field is now relatively dead, and its recurrence in other areas of the subdivided district is not anticipated.

Of the companies interested in Southwest Texas, leadership in drilling will probably be held by Humble Oil & Refining Co., Magnolia Petroleum Co., Texas Co. and Sun Oil Co. generally throughout the area. In Nueces County, large-scale operations will be share by Wellington Oil Co., Barnsdall Oil Co., Pan American Production Co., Houston Oil Co., and others. Wildcatting will continue to consist mainly of independent operations, with California Co. or Standard Oil Co. of Texas, Pantana Petroleum Co., Plymouth Oil Co., Union Sulphur Co., Wilcox Oil & Gas Co. and others engaging in exploration with the companies mentioned.

With the exception of Coastal Louisiana, no large increase in drilling is anticipated for the Gulf Coast district during the next six months, as most of the companies will confine their activity to development of recently proven structures which have only one or two producing wells.

Practically all discoveries during the past year were on large blocks controlled by one or two companies and orderly development will take place. This applies to Nome and Amelia in Jefferson County; Lockridge, Brazoria County; Silsbee, Hardin County; Fairbanks and Clinton in Harris County; Seabreeze, Chambers County, and Segno in Polk County, which is controlled by Sun Oil Co., Shell Petroleum Corp., Gulf Oil Corp., Republic Production Co., Houston Oil Co., Stanolind Oil & Gas Co., Humble Oil & Refining Co. and Kirby Petroleum Corp.

With the exception of Anahuac in Chambers County and Hastings in Brazoria County, fields opened in 1934 and 1935 in most cases have been drilled up. At Anahuac, the second largest field along the Gulf Coast, it has been estimated another 175 wells will complete the drilling program which will be finished by the running of six rigs by Humble Oil & Refining Co. and Gulf Oil Corp. The Hastings field, discovered in 1934 by Stanolind Oil & Gas Co., is still undefined in several directions and the producing limits have been recently extended outside of the company's block, and an increase in drilling can be expected.

Discovery of deeper producing horizons at Old Ocean and South Bay City in Brazoria and Matagorda counties, together with opening of two fields along the Conroe Trend in Polk and Hardin counties, is expected to open considerable develop-

ment, although it is not expected to show an increase over the usual number of wildcats in the district which has averaged 144 wildcats over three years.

Along the Louisiana Gulf Coast an increase in wildcatting activity can be expected, brought about by a two-year period of extensive leasing and geophysical and discovery of possible producing horizons below 10,000 and 11,000 feet. Most of this activity will be by major companies that have under lease approximately 37 undrilled prospects scheduled to be explored during the year. In most cases these wells will be deep tests, encouraged by discovery of commercial production below 10,000 feet at the Lafitte field in Jefferson Parish and showing of a deep wildcat in Vermilion Parish, preparing to test a sand below 12,000 feet. Companies holding undrilled prospects are Magnolia Petroleum Co., Gulf Oil Corp., Humble Oil & Refining Co., Shell Petroleum Corp., Stanolind Oil & Gas Co., Texas Co., Tide Water Oil Co. and several independent companies.

An increase can also be expected to take place around numerous old salt dome structures where several companies, including Shell Petroleum Corp., Pan American Production Co., Superior Oil Producing Co. and Texas Co. have developed prolific production during the past year. Practically all known structures have been re-leased and an increase in locations has already been noticed.

WEST, NORTH AND EAST TEXAS

Some of the fields uncovered in 1936 in West Texas will be drilled slowly due to their distance from pipe lines and the areas being held by independents, and in some cases almost in entirety by a few operators. Other fields, however, will see a large amount of drilling in 1937, especially where the acreage is widely split and forced drilling will cause a pick-up. Many blocks taken in 1927 will be expiring this year, and companies and independents will test these blocks instead of letting the leases expire as during the depression. Time of expiration will hasten tests in some instances, but most blocks were taken late in the year, which will call for the test starting the latter part of this year.

Out of six major company superintendents or engineers quizzed in regard to probable drilling in 1937, three thought there might be less drilling this year, unless new fields bring additional development. Three superintendents were of opinion drilling would hold about the same pace as last year.

One superintendent said his company was running 4 more rigs in the Monument area, New Mexico, than during the last quarter of 1936. Another company had put on 2 more rigs in West Texas. A third was running less rigs than during the last quarter of 1936, but expected its operations to increase during the latter part of 1937. One company's operations had slowed at the end of 1936, but it expected wildcatting to increase, as did four of the other company men.

One superintendent who has been busy in the East Texas field stated his company would only do about one-eighth as much drilling in that field as during the past 12 months when it drilled 150 wells. His company will not do as much work in West Texas unless some undiscovered fields caused more work. His company has about finished its drilling in New Mexico, and would do only about one-third as much in West Texas. He has had four strings of tools running steadily the last three or four months in East Texas, but expects to have only one running during the next two or three months there.

One large operating company in West Texas has two more rigs running than during 1936, and expects to keep up its pace, having much undeveloped territory to drill, with a couple of newly discovered fields to keep it busy. Another large company is also starting a rig in one of these new fields, the Goldsmith Field in Ector County, which will reach major importance, and probably see much drilling in 1937.

The Winkler and Ward and Jones County fields kept many rigs running during the past year, but at least two of these areas have been heavily drilled and development is expected to drop unless new extensions, such as brought in during 1936, cause drilling.

In West Central Texas, Shackelford County has been an active area in 1936, but drilling will decline in this area in 1937. Young County has been an active area also with wildcatting to continue during 1937 and development of new fields carried on to hold up the level of drilling. The Bryson field in Jack County has been an extremely active area with about 100 wells during the past 12 months. It will continue active, but unless there is extended drilling, may decline this year. The Anderson-Kerr pool in Cooke County caused much drilling, but that field has practically been drilled up. All other areas in North Texas will no doubt hold to about the same level, especially the shallow areas which are cheaply drilled and in which new extensions and new pools are being uncovered from time to time.

The East Texas field will no doubt fall from around 100 active drilling tests to about 50, since there are over 22,000 wells in the field now and the density is one well to around 5.5 acres. There will be much wildcatting in this area, however, especially along the fault line where oil was discovered in the deeper pay zone, Paluxy sand, in 1936.

The Panhandle field saw little wildcatting in 1936, with several new tests proposed for 1937 and perhaps others to be started this year.

ROCKY MOUNTAIN AREA

Principal operators in the Rocky Mountain area do not look for any substantial increase in drilling during 1937 and in some districts there will likely be a decrease. Fields in which there will be the most activity include Lance Creek, Medicine Bow, and the Big Horn Basin in Wyoming, and the Cut Bank field in Montana. There are a number of less important areas where drilling will be continued on about the same scale as in 1936.

The Lance Creek program calls for 10 or 12 wells by the three principal operators, or less than half the number drilled last year. The pool has been fairly well outlined except to the east and northeast and should outpost wells in these directions extend the area, the drilling program may be altered. At present wells are being spotted on the basis of one to 40 acres.

In Medicine Bow the Ohio Oil Co. and Standard of California control the field and development is expected to proceed slowly. Two wells are being started. It is doubtful if more than four or five will be drilled.

There is an immense territory to be drilled in the Cut Bank field in Montana, but due to the limited market, operations will be held to a minimum. Texas Co., one of the largest operators, probably will drill around 20 wells, slightly less than in 1936. The field total is not expected to exceed 100, about the same as in the past year. The number would be smaller but for requirements on Indian land and offsetting requirements.

Texas Co. will drill four or five wells in the La Barge field in western Wyoming and two in the Moffat field in Colorado. This is a slight increase.

Mountain Fuel Supply Co. has five wells definitely lined up in its territory in northwestern Colorado, southwestern Wyoming and northeastern Utah. These call for two at South Baxter Basin, two at Powder Wash and one at Clay Basin. In addition it may drill one or two wildcats.

Sinclair-Wyoming Oil Co. is expected to drill at least two Tensleep wells in Little Lost Soldier and Wertz fields in Wyoming. It has obtained the royalty oil contract from the government for Salt Creek and with present production and the two proposed Tensleep wells it should have an ample supply for Parco refinery.

The unknown factor is the wildcat play. Expiration of permits on government land on December 31 is expected to force some drilling in the three principal Rocky Mountain states. Eastern Colorado play will depend largely upon pending negotiations and the well now drilling by Gulf Oil Corp. in Kiowa County. The opinion most widely held is that wildcatting will equal and possibly exceed 1936.

EASTERN

There is little question that drilling will increase substantially in the Pennsylvania Grade crude fields in 1937, justified both by the higher crude price and the demand.

The water-flood and air-gas repressured areas, which combine to produce 75 per cent of all Pennsylvania grade crude, will be drilled more intensively because additional drilling is necessary to maintain or increase the rate of production.

Competent observers believe that when weather permits there will be upward of 200 rigs in operation in the Bradford field alone. A proportionate number will be in operation in the Allegany field.

The success of secondary recovery methods in the Warren-Forest area can be regarded as a definite indication that increased drilling will follow this year.

Forty-odd rigs were in operation at one time last summer in the Pleasantville-Grand Valley area of the Venango-Crawford district. More than a score of repressuring plants were installing or had been installed by the close of 1936 and the development of these properties presages more drilling.

The search for additional gas reserves, which resulted in the drilling of more than three score deep sand wells in proven and wildcat areas of northern Pennsylvania and southern New York in 1936, will be continued at least at the same level as no substantial new discoveries were reported last year. At the same time new outlets, three large pipe lines to northern and western New York and southwestern Pennsylvania, were provided.

South of the repressured area, the increase in drilling is not likely to be so pronounced so far as the Pennsylvania fields are concerned. The comparatively new Queen Junction section of Butler County, areas in Greene and Washington townships, Greene County, where a couple of 100-bbl. wells were completed last year, and the Fifth sand and Fifty-foot sand pay streaks in Amwell Township, Washington County, will probably be developed more than in 1936 on account of the crude price. Successful completion of the Oriskany sand gas well in South Union Township, Fayette County, would result in substantial development there for extensive acreage in all directions is under lease awaiting the result.

In West Virginia where gas completions outnumbered oil completions three to one last year, further attempts will be made to define the Oriskany gas field which yielded a number of good producers last year.

The increased price should bring a gain in operations in southeast Ohio where a number of better than average producers, one which flowed 200 bbls., were completed in the Clinton sand last year.

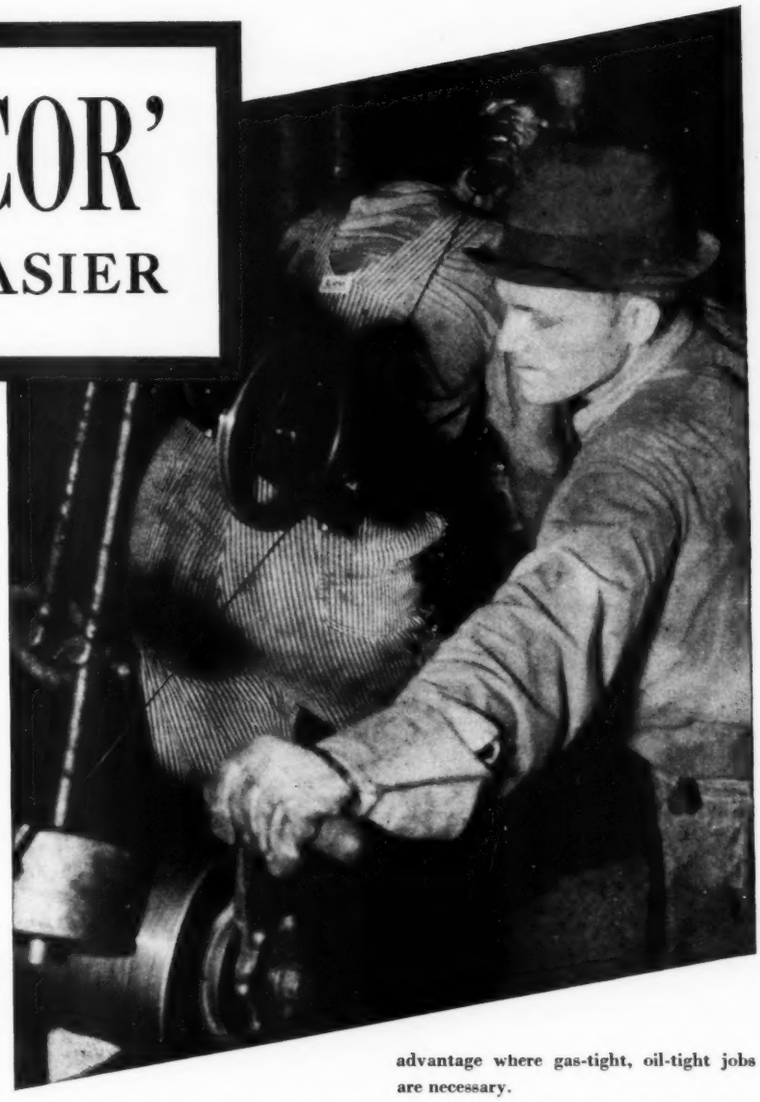
ILLINOIS

Major companies are still leasing and exploring in Illinois and the majority of these companies are planning to start operations within 90 days. Gulf Refining Co. is very active in Macon County and 10 new leases were filed by that concern during the week. The Gulf Co.'s most recent acquisitions in Macon County are leases on 120 acres of the Bessie Matthew farm, 80 acres on the J. & E. Gordon farm, 80 acres of the Anna Austin property, 557 acres of the E. & B. Goffinet farm, 320-acre lease on C. & H. Arthur property, a lease on 198 acres of the John Taggart farm, the A. W. McClure 160 acres, the J. & J. Beckett 120 acres, the J. & L. Beckett 120 acres and the C. & I. Gordon 240 acres, making a total of more than 2,000 acres.

Two May Join Compact

Two additional states, California and Michigan, will join the six states already in the Interstate Oil Compact, Ernest O. Thompson, chairman of the Texas Railroad Compact Commission, said at Washington.

'STARCOR' PUMPS EASIER



16-lb. Slurry Goes Down 8591-Ft. Hole 20 Minutes Faster

KENBEN Oil Company's Maco Stewart No. 2, Dickinson, Texas, Well shows how an easier-to-pump cement slurry helps make a successful shut-off job. This is an 8591-foot hole, with bottom-hole temperatures estimated at 176°.

20 Minutes Faster

Four hundred sacks of 'Starcor' in a slurry averaging 16 lbs. were mixed and put into the hole between 11:00 and 11:30 p. m. August 18th. Mud pumps were started 11:35 p. m., and plug reached bottom 25 minutes later, at exactly midnight. The crew were surprised, for the cements they had been using took at least 45 minutes for pumping down.

Proof that 'Starcor,' in a slurry weighing 16 lbs. or more, pumps easier and goes into place with less effort.

Special-Purpose Cement

That is because 'Starcor' is specially made for Oil Men to use in deep wells. It pumps easily in a heavy slurry, and sets slowly, even at high temperatures. And it's done without admixtures—the properties are built right into the cement. No need now to thin down the slurry at the well.

Stays Gel-Like

'Starcor' stays gel-like under all conditions, resisting mud contamination. Proof: When this Kenben well was drilled out on August 21st, the core was found to be hard and uniform, free from soft spots—important advantage where gas-tight, oil-tight jobs are necessary.

Yes, 'Starcor' is the Oil Man's cement, sure enough—the answer to the deep-hole problem and where high temperatures are encountered.

Try 'Starcor' Next Time

Use it on your next job—see if you don't agree that 'Starcor'* is a real step ahead. Your Lone Star and 'Incor'* dealer can supply you on short notice. Lone Star Cement Corporation, Dallas . . . Houston.

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the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

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A New Threat

Just as the oil industry was congratulating itself upon being free for the time from the fear of federal control, a new threat has appeared in official agitation in New York state and some others for declaring gasoline a public utility.

Heretofore state regulation has been concerned chiefly with conservation in the oil producing states, which has been welcomed by the industry, but the movement under way in New York which consumes ten per cent of the products of petroleum in this country, is aimed at consumers. It presents the alarming possibility of gasoline being regulated as a public utility according to the various legislation of 48 states.

A review of the proceedings before the investigating committee of the New York legislature shows how easy it is to place any industry in an unfavorable light by permitting half answers to questions that are in themselves ridiculous and utterly lacking in knowledge of actual conditions. The haywire proposal for grading gasolines as A, B, or C without paying any attention to fundamentals is a natural sequence.

Gasoline produced from oils from widely scattered states cannot be judged like water, milk or power produced within a state. There is no uniformity in costs of production, manufacturing, transportation or marketing, or even between stations on opposite corners which may vary widely because of respective volumes of business, or sales of accessories. Public utility regimentation in fact, assumes a condition that does not exist in the oil business.

Investigations like that in New York start out with the stage all set for unmasking a villain. Interrogations sound like statements of fact, however absurd, and the incomplete answers, witnesses are forced to make are taken as admission when headlines appear.

The consumer thinks the legislator is his protector and, backed by mistaken popular sentiment, regulation is put through, creating new political jobs and increasing the payroll which the taxpayer must pay.

That is the sort of thing the industry may face in 48 states unless it bestirs itself. The remedy is to familiarize the public with the necessary operations of a complete oil unit. It can be shown that the industry operates upon a sound and economic basis, prices moving up and down with conditions.

More important than anything else, the price is cheap with more service thrown in than is obtained in the distribution of any major commodity.

WHAT CAUSES *Cementing Failures?*

. . . AND CAN THEY BE AVOIDED?

Every OIL MAN might well give careful consideration to these two important questions.

Failure of the original cement job to effect a water shut-off is admittedly, in some instances, due to subsurface conditions which cannot be controlled. In the majority of cases, however, results *can be definitely controlled* and one important step in that direction is to insure *proper distribution of cement up and around the shoe and casing.*

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The Baker Cement Whirler Float Shoe differs from ordinary types of cement shoes in that, it is designed with a number of baffled side ports (see illustration), which direct the cement slurry with a rapid whirling motion. This spiral movement provides the best possible chance for the complete distribution of the cement for a greater distance up and around the casing, resulting in a better cementing job and practically eliminating any tendency toward channeling.

Also AN EFFICIENT FLOAT SHOE

While the Baker Cement Whirler Float Shoe is primarily a cementing shoe, it is also a strong, safe, guiding and floating shoe. It possesses the 3 Baker Features, in a perfectly balanced combination . . .

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It is stronger than the collapsing strength of your casing—safe for strings of *any* length.

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A Bakelite valve chamber is provided, having ample circulation areas, with a buoyant Bakelite ball which floats in rotary mud or cement slurry, double-sealing against a rubber ring (backed by Bakelite and concrete) with the *slightest reversal of pressure.*

3. DRILLABILITY

Baker Cement Equipment affords complete drillability as *No Metal* ever is used for the internal construction of plug or valve. The entire assembly is constructed of special Baker-Formula Concrete and Bakelite and is easily drilled *OUT* and drilled *UP* into small harmless fragments and *circulated out of the hole.* There is *no metal* left in the hole to prevent coring directly below the shoe, or to deflect the bit and start a crooked hole.

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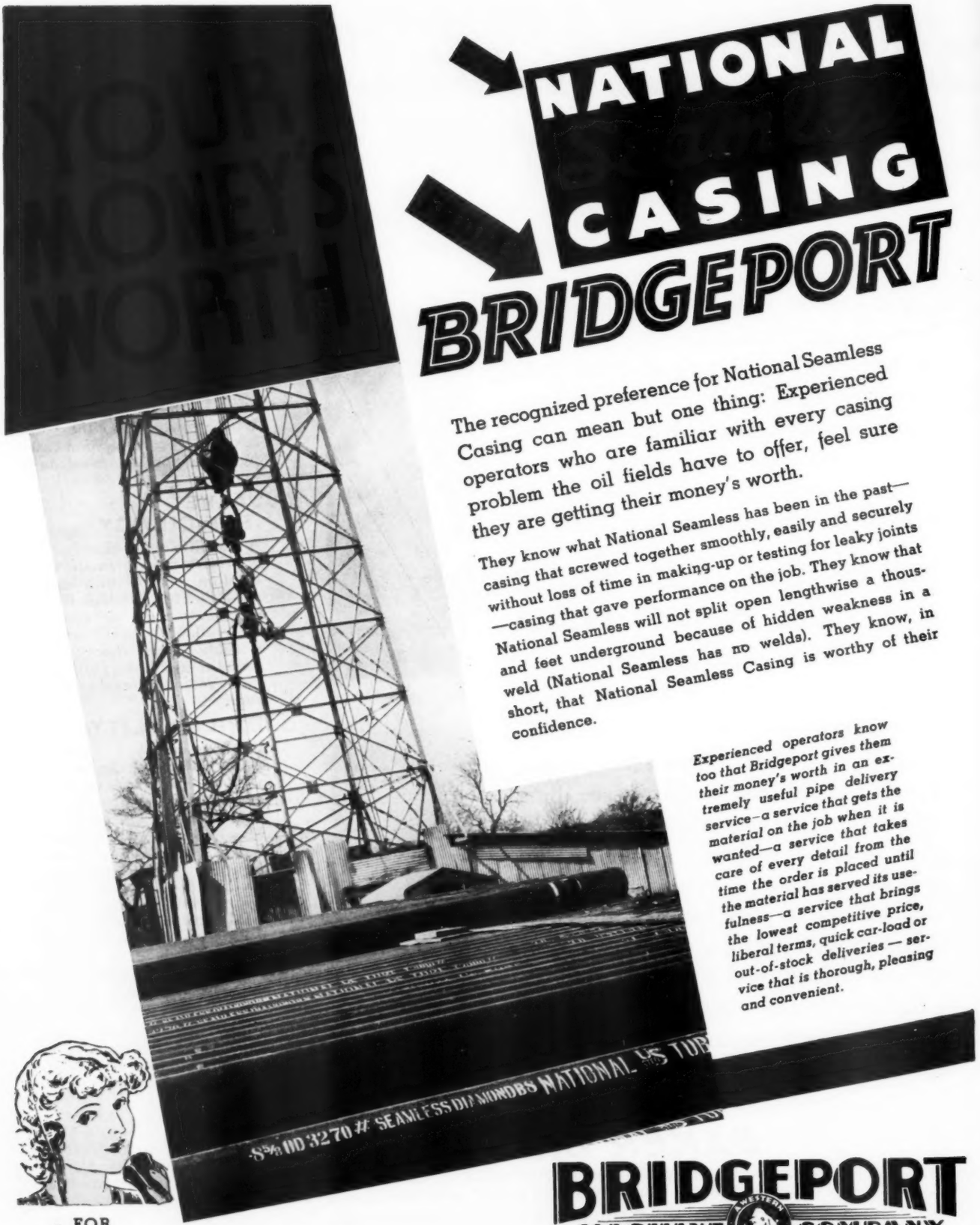

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They know what National Seamless has been in the past—casing that screwed together smoothly, easily and securely without loss of time in making-up or testing for leaky joints—casing that gave performance on the job. They know that National Seamless will not split open lengthwise a thousand feet underground because of hidden weakness in a weld (National Seamless has no welds). They know, in short, that National Seamless Casing is worthy of their confidence.

Experienced operators know too that Bridgeport gives them their money's worth in an extremely useful pipe delivery service—a service that gets the material on the job when it is wanted—a service that takes care of every detail from the time the order is placed until the material has served its usefulness—a service that brings the lowest competitive price, liberal terms, quick car-load or out-of-stock deliveries — service that is thorough, pleasing and convenient.

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Oil News from Foreign Lands

Far Eastern Option

Far Eastern Petroleum Co., subsidiary of Standard of California, holds an option to acquire 50 per cent interest in 10 European marketing subsidiaries of Texas Corp., any time up to July 1, 1939. Details of the links connecting foreign operations of Standard of California and Texas Corp. were reviewed by the latter company when a registration statement was filed with the Securities and Exchange Commission in connection with a proposed capital stock issue.

In exchange for its 50 per cent stock interest in Bahrein Petroleum Co., Ltd., Texas Corp. contributed five marketing companies in the Far East, namely, Texas Co. (Australasia) Ltd.; Texas Co. (China) Ltd.; Texas Co. (India) Ltd.; Texas Co. (Phillipine Islands) Ltd.; and Texas Co. (South Africa) Ltd. All stock of these companies was acquired by California Texas Oil Co., Ltd., which in turn is owned by Bahrein Petroleum Co. The five marketing companies accounted for approximately 29 per cent of the export business of Texas Corp.'s subsidiaries operating in the United States.

Texas Corp. also acquired a 50 per cent interest last December in California Arabian Standard Oil Co., which owns a concession in Arabia and a 50 per cent interest in N. V. Nederlandsche Pacific Petroleum Maatschappij, which controls concessions in Sumatra and Java and has 20 per cent stock interest in N. V. Nederlandsche Nieuw Kuinee Petroleum Maatschappij, owner of a concession in Dutch New Guinea.

The consideration by Texas Corp. for the stock interest in these companies included an agreement to pay on call of California Arabian Standard Oil Co. $1,216,250 unpaid premium on the 50 per cent of the stock controlled by Texas; to pay on call of Nederlandsche Pacific, 2,200,000 guilders (about $1,497,320 at present par) unpaid on the 50 per cent stock controlled by Texas and to pay Far Eastern Petroleum Co., Ltd., $3,000,000 unconditionally, and a maximum of $18,000,000 when and if oil or other products are produced from the Arabian concession or the Dutch New Guinea concession. Amounts of the installments are to be the total of 25 cents a barrel for all oil and 25 per cent of the value of all other products produced from the Arabian concession and the same amounts for 20 per cent of the oil and other products produced from the Dutch New Guinea concession. Texas Corp. is not obligated to make any payment based on oil or other products from the Sumatra or Java concessions, being entirely a matter of judgment by N. V. Nederlandsche Pacific.

In extending to Far Eastern Petroleum Co. an option on the 10 European companies until July 1, 1939, Texas Corp. may receive cancellation or reimbursement of payments on the item of $18,000,000. It is a condition that the Arabian concession and 20 per cent of the New Guinea concession be developed to show reserves of crude aggregating 72,000,000 bbls. If Far Eastern exercises its option, payment is to be made by cancelling the unpaid balance on the $18,000,000 obligation, and repaying to Texas Corp. the amount previously paid.

The Far Eastern Petroleum Co.'s option covers the following marketing units of Texas Corp.:

Naamlooze Vennootschap Texas Co. (Holland); Texas Co. Aktiebolag (Sweden); Texas Co. A/S (Denmark); Texas Co. (Ireland) Ltd., (Irish Free State); Texas Co. Societe Anonyme Belge (Belgium); Texas Co. Societa Anonima Italiana (Italy); Texas Oil Co., Ltd. (England); Texas Co. Sociedad Anonima Espanola (Canary Islands), two unnamed subsidiaries operating in Europe and certain European and African consignment agencies of Texas Co. (Overseas) Ltd.

Bahrein Island is now supplying a part of the crude and refined products required to meet demand of markets in which units taken into California Texas Oil Co., participate. With completion of additional refining equipment the middle of this year, Bahrein Petroleum Co. is expected to fill all requirements of that group and permit expansion.

The Bahrein company has a long-term concession from the Sheik of Bahrein to produce and refine crude oil in an area of approximately 100,000 acres. Until the link was established with Texas Corp. neither Bahrein Petroleum nor Standard of California had marketing facilities through which the Persian Gulf production might be distributed. Texas Corp. estimated $10,000,000 or more may be spent for exploration and refining in five years. California Arabian Standard Oil Co. has a long-term concession from the Saudi Arab government in a Saudi Arabian area covering 100,000,000 acres and a preference right to acquire a concession on an additional area. The Saudi Arabian concession has been proved productive in certain spots and work under way will afford a clearer conception of its value. Wildcat exploration and detailed geological studies are also being conducted on the Arabian mainland.

N. V. Nederlandsche Pacific's concession in Sumatra covers approximately 1,482,000 acres between the Djambi-Palembang and East Coast-Atjeh districts, about due west of the southern tip of the Malay Peninsula. Geological and geophysical surveys are being made and drilling probably will be launched during 1937. The concession runs for six years from June 12, 1936. A subsidiary of Nederlandsche Pacific owns the long-term Java concessions aggregating 475,000 acres. The Dutch New Guinea concession extends for a long term and covers 24,710,000 acres, which must be reduced by selection to 2,471,000 acres within 10 years.

Standard-Vacuum in New Guinea

Island Exploitation, Ltd., is a new company recently organized in Melbourne, Australia, by Standard-Vacuum Oil Co., to carry on geological and geophysical work in northeastern New Guinea. Prime investigations of the structural possibilities in the licensed territory are now under way.

The Standard Oil Co. of California, the Standard-Vacuum Oil Co. and the Royal Dutch-Shell group are jointly interested in Netherlands New Guinea through N. V. Nederlandsche Nieuw Guinea Petroleum, which is now conducting geological investigations. Aerial photography is being used followed up by more detailed study where justified. In Papua, the Oriomo Oil Co., Ltd., affiliated with Oil Search, Ltd., an Australian firm and Papua Oil Development Co., Ltd., a Shell subsidiary, are conducting exploratory work.

New Afghan Concessions

Reports from Iran announce two concessions have been signed by the Iran government with American companies for oil developments in north and eastern Iran, including the longest pipe line in the world.

Amiranian Oil Co., subsidiary of Inland Exploration Co., recently given concessions in Afghanistan, (page 24, Jan. 7 issue) has been awarded a concession covering 200,000 square miles in parts of six provinces, to be reduced after 15 years to 100,000 square miles by elimination of non-oil areas.

Iran Pipe Line Co. was given concession for a pipe line 1,700 miles long across Iran and eastern Afghanistan to the Caspian Sea. The company is also a subsidiary of Inland Exploration Co., controlled by Seaboard Oil Co. Amiranian Oil Co. gave an undertaking to bring production as soon as possible to 40,000,000 bbls. annually.

Negotiations were conducted by Charles C. Hart, former United States minister to Iran, and Frederick C. Clapp, of New York, technical adviser.

Wildcat in Switzerland

By HENRI BRANDLI, R.A.S.

Will the next big oil field be situated in southwestern Switzerland? This, so fundamental economic question for Switzerland, may soon be solved one way or the other, in a few days or months. An especially interesting wildcat is situated 2½ miles due east of Yverdon at Cuarny at the southern end of the Lake of Neuchatel. Its rotary rig is of up to date type, a derrick 197 feet high, with electric power for the drawworks and pumps and capable of going to a depth of 13,120 feet. Elevation is 1,805 feet above M.S.L. and on November 10 the operators had reached 2,790 feet or 985 feet below sea level.

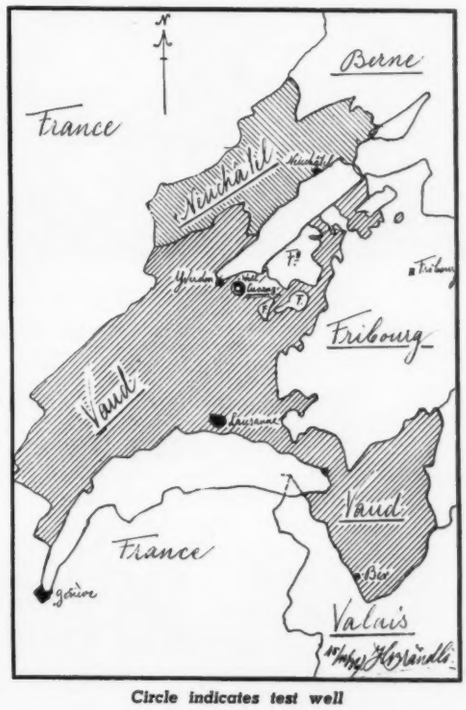
The results so far are certainly most encouraging, as the following excerpt from the log will show:

Molasse—1,109 feet, fine grey-green sandstone (Cepeae rugulosa) impregnated with oily substance; 1,272 feet, sandstone Macigno, grey-green, impregnated with oily substance (13 feet); 1,406-46 feet, sandstone and Macigno impregnated with oily substance; 1,496 feet, gas.

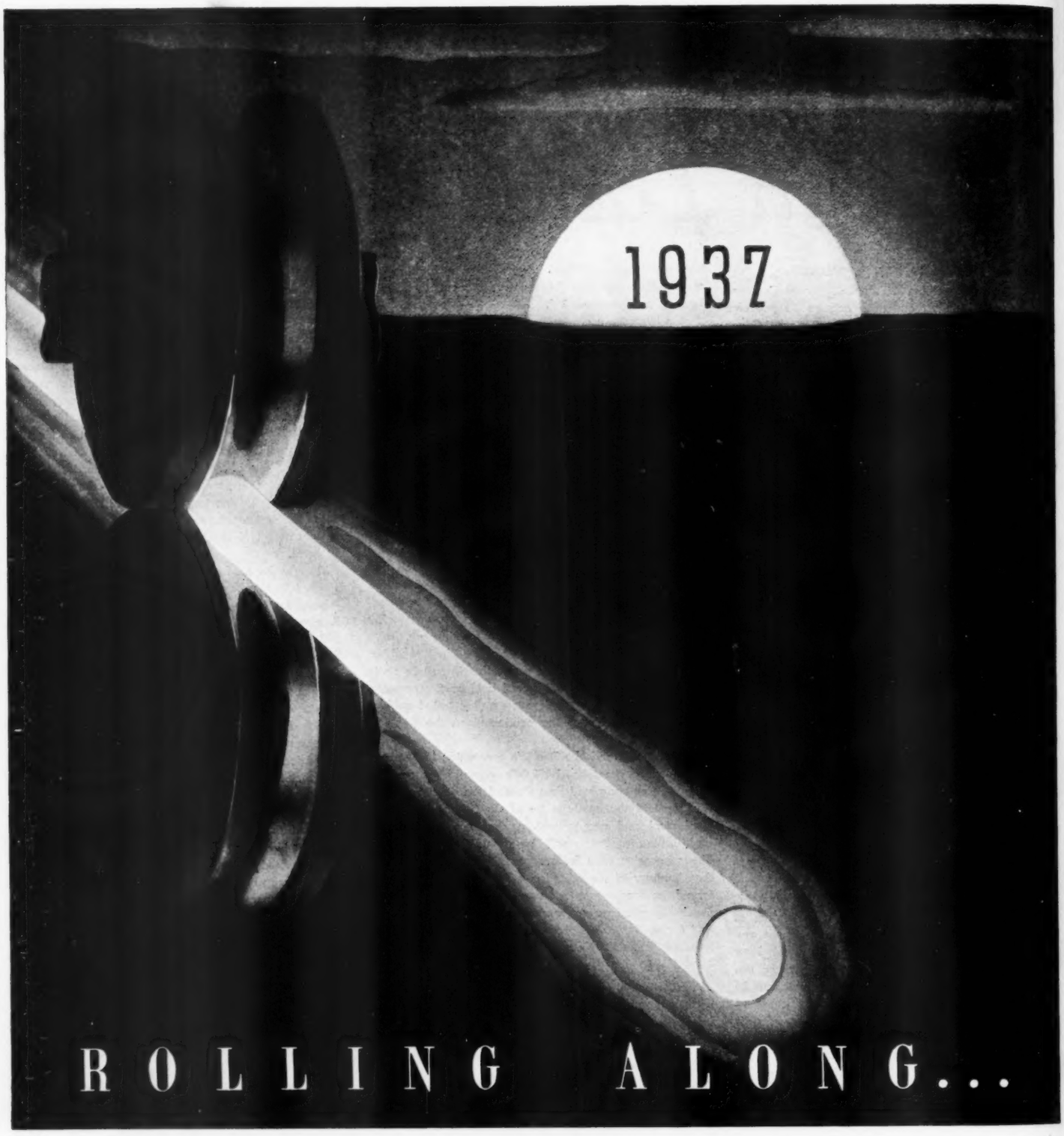
Cretace—1,654 feet, gas; 1,700 feet, Marno lime impregnated with heavy oil; 1,710 feet, gas; 1,798-1,818 feet, infiltrations of heavy oil in open fissures, with peripheric impregnations, exudations in air; 1,828 feet, impregnated with oil; 1,890 feet, gas.

Drilling is now in the Jura formation, top of Kimmeridgian, after encountering three different showings of oil in fractures. All precautions are being taken to prevent a blowout from the Dogger and Trias formations to be expected next.

Sketch map shows southwestern Switzerland, shaded are the two cantons of Vaud and Neuchatel, the concessions for oil granted to the S. A. Hydrocarbures.



Circle indicates test well



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Multiple Sands Require Extensive Cement Use in Rodessa

By MITCHELL TUCKER

The multiple producing zones at Rodessa, with their high temperatures and pressures, bottom encroachment of water, and variations in points of oil and gas saturation, have all combined to make this field the scene of a wide variety of specialty cement work in reconditioning wells during recent months. The actual transformation of gas wells to oil wells has been accomplished by successful squeeze jobs properly applied to the open-hole gas zone of the multiple horizon.

Advancements in the manufacture of specially prepared cements for deep well high-temperature work, the cement tools with which to apply the cement, and the cementing technique of companies specializing in the work, have made possible the successful application of jobs which a short time ago would not have been attempted.

Rodessa being the most active high-temperature, deep-drilling area during 1936, and with the multiplicity of troublesome bottom-hole conditions during and after well completion, it has provided an excellent place to establish the merits of the newly developed cements and methods in all types of specialty work.

SLOW INITIAL SET REQUIRED

The new type of deep well cement has been perfected after a great deal of research in producing a suitable product for high-pressure and temperature conditions. Principal objectives of these oil-well cements were to provide a slow initial set, with greater ultimate strength under high-temperature and pressure conditions, permitting longer period of normal fluidity and greater pumpability during that period. More complete and uniform penetration of porous medias, together with greater weight of slurry to discourage mud or salt-water contamination also makes them applicable to specialty work. The fact that they are resistant to sulfate water provides an increased factor of protection to the exterior of casing.

The average mud weight used while drilling in at Rodessa is 10.5 pounds per gallon, while cement slurries of the new type average from 14.5 to 16 pounds per gallon. Such differences in density of fluid keep the mixture of the two at a minimum.

Rodessa bottom-hole temperatures vary from 190° to 200° F. Such high temperatures are known to stiffen, render difficult to pump, and cause early hardness of ordinary portland cements. Pressures such as encountered there also hasten hardening and result in somewhat reduced strengths. Properly grained cements, with low lime-composition, and the addition of certain chemicals to adjust setting action, have assisted in developing early strength at elevated temperatures, with increase in setting time.

In addition, such cements have proven to be more impermeable against formation water, and also capable of forming a firm and lasting bond between casing and walls of the hole. The slurry has been kept sufficiently fluid so that it can be handled by the reciprocating pumps at pressures far greater than ever attempted with ordinary cements, thus in another way extending their application in oil well reconditioning. Furthermore, with the retarded setting action, the fluid remains pumpable sufficiently long to permit it to follow all permeable irregularities of the well bore just as far back from the hole as the formation will allow.

APPLICATION OF CEMENT

Typical squeeze-jobs, plug-back work, sidetracking, perforation sealing, cementing off of gas producing zones, etc., are not uncommon in the field today. Certain large operators have standardized upon the use of this type cement on all their oil strings, assuming that this product gives a safety or insurance factor against unsuccessful pipe cementing jobs.

To understand the need and application of cement to well conditioning at Rodessa, some knowledge of the production section is desirable. Excessive gas-oil ratios in improperly cased holes have constituted perhaps the most troublesome problem in the field, and has permitted much of the waste suffered there. Squeeze jobs have been used in different manners in an effort to effectively reduce the ratios, and in some cases have actually transformed the wells from a gasser to oil wells. The last survey of the ratios on the Louisiana side of the field showed oil wells (those on the northern flank of the field between the oil-gas and oil-water contact) of 4,868 to 1; distillate wells (those running along center of field and producing a fluid having gravity greater than 51° A.P.I.) of 51,352 to 1; or an average of both types of 9,704 to 1. The most recent order of the commissioner of conservation places the entire field under a maximum ratio of 2,000 to 1, and this will require an active campaign to recondition about 50 offending wells.

This high gas-oil ratio condition has largely been attributed to the manner of well completion on the northern flank of the field in the four district producing zones, and their occurrence in the sharply dipping beds on the faulted anticlinal structure to the north. The two uppermost zones of Lower Glen Rose (Hill and Gloyd) are separated by an anhydrite stringer about 80 feet thick and carry gas only. The Hill is the high-pressure zone, and has a lower porosity generally than the Gloyd and others. The Dees sand occurrs below the 50-foot impervious section of lime and shale beneath the Gloyd, and carries mostly gas with some oil. The Young sand, in varying thickness, occurs below and is the main oil-producing body in the field. Some geologists do not distinguish between the Dees and Young as a producing section. The 50 or more wells known to be exposed to more than one of these formations are thought to permit migration of gas from the upper and higher-pressure formations down to the Young oil sand, to be produced up structure in certain oil wells.

Specialty cement work of the various types has been done to correct this condition locally, but according to provisions of the recent commission order, immediate steps must be taken to correct the entire condition. Section 9 of recent Order No. 7, reads:

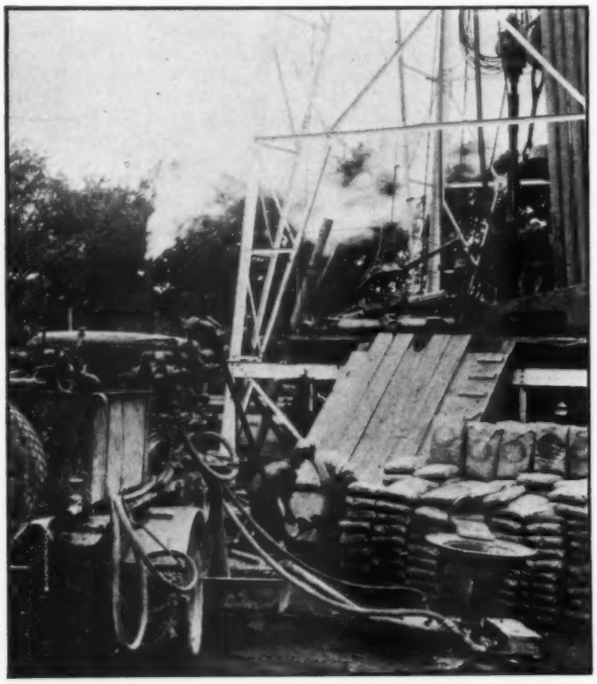
"No gas found in the upper part of a producing horizon which can be separated underground from the oil in the same horizon, or in a different horizon, shall be used to flow oil to the surface, and all gas, so far as it is practical to do so, shall be separated underground from the oil and securely protected.

"No two horizons capable of producing oil and gas, or either of them, shall be left open in the same well unless such horizons are naturally interconnected in such a manner as to prevent practical separation. The Hill sand, the Gloyd horizon, and the Dees-Young group are each recognized as separate reservoirs and shall be so maintained. Any well producing oil and gas, or either of them, from two or more horizons shall be shut in and the operator shall make all diligent effort to secure separation of the said horizons; any well in such condition that separation is practically impossible, shall be plugged and abandoned."

RECONDITION OFFENDING WELLS

Therefore, in the face of this order, and the complex bottom-hole conditions, all operators of offending wells are looking for means of reconditioning the wells, and the use of premium cements is coming in for a large share of considera-

Cementing truck hooked up to pump cement into a well in the Rodessa field



Cementing crew and truck in action during the cementing of 13⅜-inch casing

tion. Section 10 of the same order follows:

"Cement used shall be of a type which will meet the requirements of temperature and pressure conditions known to exist in the field at the depth used."

Short strings have been set in a number of instances, but some operators are not willing to reduce hole size at this time in the face of possible deeper drilling.

AIDED BY RECENT DEVELOPMENTS

Serious consideration is being given to placing a "squeeze" upon the entire gas zone in wells exposed to more than one formation. Such work probably could not be considered if recent advancements in cements and technique had not been made. Any hole given this type of reconditioning would probably be underreamed to provide a square shoulder seat at top and bottom for the cement, and also afford as thick a cement wall as possible opposite the high-pressure formations. Some are suggesting the application of an acid charge to the oolitic and limey portions of the gas-bearing sand; the fingering action of the acid would encourage more thorough penetration of the gas sand by the cement, and aided by the high degree of pumpability of the cement, a successful job would be more definitely assured. Cement retainers have been employed on the majority of successful reconditioning jobs here, and their use is considered necessary in such a squeeze on upper gas formations.

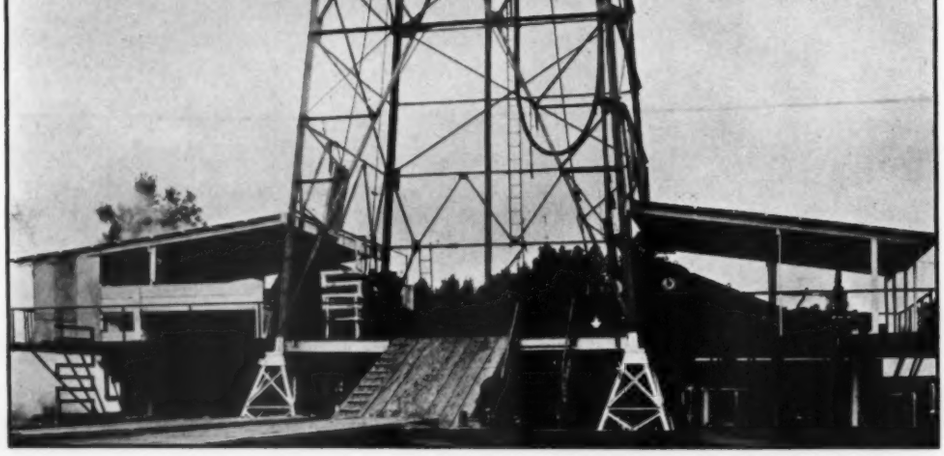
A typical squeeze job which was successful in reducing gas-oil ratio and increasing flow of oil was recently made upon completion of a well. On initial test the well showed for a large volume of gas with slight oil production. The 7-inch casing had been set 30 feet off bottom in this particular well, the upper 14 feet of exposed sand carrying gas. A cement retainer was run on bottom of 2½-inch tubing to a position in the bottom joint of casing, where a trip ball was dropped to apply hydraulic pressure and set upper slips, which in turn permitted the setting of lower slips and expanding of the packer to provide positive seal between casing and tubing. Gas pressure was broken down by the injection of water after the application of 4,000 pounds pressure. After the formation began taking water pressure broke down to 1,800 pounds and 100 sacks of cement was delivered to the formation. This was followed by sufficient mud to put the remaining cement in tubing out into the formation, and mud was circulated back out through casing by lifting circulating jar on the retainer.

Tubing was backed off the retainer body and pressure held upon the formation for 72 hours. After drilling up the retainer body only 74 sacks of cement was returned to the surface by circulating, indicating that 26 sacks had been permanently placed in the gas formation. Completion test showed that gas production had been materially decreased and well gauged 159 bbls. of oil daily through quarter-inch tubing choke, tubing pressure 1,640 pounds and casing pressure 1,720 pounds.

CEMENTING OFF UPPER SANDS

In another instance hole was drilled to a total depth of 5,991 feet, pipe set and cemented on bottom. After waiting for setting period the pipe was perforated and the well showed for a 20,000,000-foot gas well, even though it was perforated 8 feet below top of the Young sand in the oil-saturated section. Operators concluded that the original oil-string cement job had not sealed off upper gas sands and decided to place a squeeze job with the special cement through the perforations to shut off the gas sands. The well was shut in and killed with water. Injection of water was continued just as long as the formation would take it. Gas pressure was broken down at over 3,500 pounds, and formation continued to take the water at 2,500 pounds, the water following the gas back into formation. A 100-sack batch of cement immediately followed the water and was placed in the formation at 2,500 pounds, where it was held in position for four days at about 2,000 pounds pressure. Releasing pressure on the fifth day, the plug was drilled and additional penetration taken to 6,001 feet, where the well came in flowing 12 bbls. of oil hourly through a quarter-inch tubing choke; tubing pressure 300 pounds and casing pressure 800 pounds.

It is the growing practice to set oil strings on bottom and heavily cement the entire section with special cements; then perforate opposite the desired zone to bring the well in with proper gas-oil ratio. In one notable instance perforation was made at a point in the gas saturation rather than the oil by mistake, bringing the well in as a gasser. Mud was injected to break down the gas formation and followed with a cement charge, which was successful in completely cementing off the face of the gas sand and surrounding area. Casing was again reperforated, this time at a proper location, and the well was completed as a good oil producer.



Newest type drilling rig seen in Rodessa field, located at R. W. Norton No. 1 Payne, SE corner section 27-23-16. Dual drawworks are employed, the one on the right a standby unit

Corrosion Testing, Lubricants to Feature A.S.T.M. Meeting

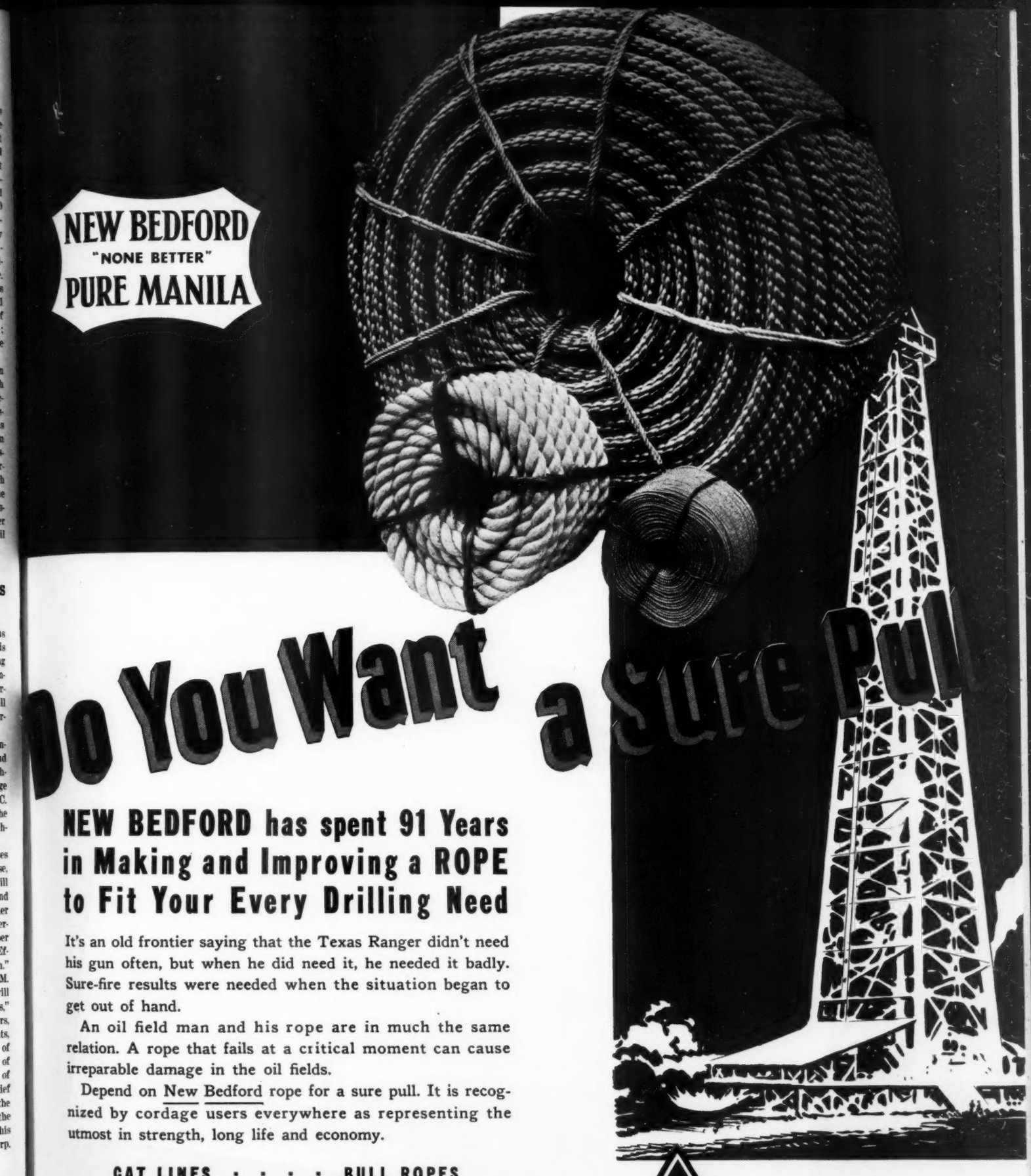
The American Society for Testing Materials has announced that the 1937 regional meeting which is to be held at the Palmer House in Chicago during the week of March 1 will be featured by a Symposium on Lubricants and a Symposium on Corrosion Testing. Each of these symposiums will comprise technical papers by outstanding authorities in the respective fields.

The Symposium on Lubricants is being sponsored by committee D-2 on petroleum products and lubricants and the executive committee of technical committee B on motor oils is in direct charge of the arrangements for the symposium, with H. C. Mougey, General Motors Corp., chairman. The program has been developed to comprise four technical papers.

The first paper on "Engine Deposits—Causes and Effects" will be presented by Dr. W. A. Gruse, Mellon Institute of Industrial Research. This will cover sludge (both high-temperature sludge and low-temperature sludge), ring sticking and other oil deposits formed in the engine. A. J. Underwood, General Motors Corp., in the second paper will cover the subject, "Automotive Bearings—Effect of Design and Composition on Lubrication." The third paper, which is to be given by Dr. G. M. Maverick, Standard Oil Co. of New Jersey, will deal with "Addition Agents for Lubricating Oils," including such materials as pourpoint depressors, viscosity index modifiers, oiliness addition agents, oxidation inhibitors, etc. The concluding paper of the symposium is to be a very brief summary of the papers given at the symposium in 1933 and of the three papers above mentioned, using this brief summary as an introduction to a paper on the subject, "How to Select a Motor Oil from the Standpoint of the Consumer." The author of this paper is to be Dr. W. S. Jones, Studebaker Corp.

Course in Diesel Engineering

Announcement has just been made by the extension division of the University of California, Berkeley, Calif., that their course in diesel engineering has been thoroughly revised and is now open for those who wish to enroll. The course presents a general discussion of the elements of the diesel engine so as to furnish the practical man with fundamental principles which will assist him in the operation and maintenance of the engine.



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TO THE MANUFACTURERS WHO
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To the 52 manufacturers of oil and other equipment who established offices, branch plants or warehouses in Tulsa during 1936, this committee wishes to offer its congratulations on what we are certain was a wise business move.

Tulsa's position as headquarters city of the Petroleum Industry grows stronger with each year. Centrally located in the nation which produces 60% of the world's oil, and in the Midcontinent, which produces 40% of the world's oil, - Tulsa now is headquarters for more than 400 oil companies, representing production, pipe lines, refining and marketing throughout the Midcontinent, Gulf Coast and Rocky Mountain areas. Fifty-four drilling contractors have their headquarters here, and the bulk of natural gasoline production throughout the nation is controlled by Tulsa companies. It cannot but prove an asset to the manufacturer of equipment and supplies used by the oil industry to be strongly entrenched in this great buying center.

We are confident that all of you, in the short time you have been here, have already received ample proof of the advantages of a Tulsa headquarters, - and we take this occasion to again assure you of the cooperation of this committee and to wish you a steady growth in business during 1937.

Sincerely,

OIL INDUSTRY COMMITTEE
Tulsa Chamber of Commerce

By C. D. Watson
Chairman

Old Wells Are Limited by Natural Conditions Revealed by Oil Mines

By L. G. E. BIGNELL

With the increased demand for crude oil the owners of stripper wells are resorting to many means of trying to increase production. No proration has been applied to these old fields because it is recognized such restrictions would probably permanently hurt the wells. Secondary methods of recovery have been applied in many fields consisting of vacuum, repressuring and waterflooding. This has been done because the formations have been depleted of the natural energy once stored with the oil and it is necessary to use mechanical means to drive the oil to the wells.

There are some fundamental conditions existing in old fields, which are not as generally recognized as they might be, which will limit the rate of flow of oil to the well bores. Older methods of production contemplated the dissipation of the gas accompanying the oil and in doing this the oil has been thickened and does not flow as freely as it did when mixed with gas. In many fields there is an absence of water drive to assist in moving the oil to the wells. This deficiency is being made up by forcing water into input wells and driving the oil ahead of it to the output wells. Gas or air is also forced into the producing sands and drives the oil ahead of it to the outlet wells.

LOW GRAVITY OIL PRODUCED

Without artificial aid these old wells will produce from a few quarts to 3 to 5 bbls. of oil each day. This oil is usually of lower gravity than the oil produced from the same wells when the field was young. The walls of the hole become coated with a waxy precipitate and many methods have been used to remove this coating, but even after treatment the increase in production is not appreciable and the sand again seals.

To find an explanation for this underground condition it is well to refer to the experience of oil mining. This is the original method of producing oil from surface deposits, but it was abandoned when it was found the oil could be extracted through holes bored from the surface to the producing horizon. But some venturesome folks have actually revived this oil mining method and sunk shafts to the oil-producing stratum and observed conditions there.

In France oil was extracted by mining at Pechelbronn in 1735 and was again undertaken by the Germans during the World War in 1917. This was a war measure as the Germans needed the crude oil and shafts from 500 to 825 feet deep were sunk by experienced miners from Westphalia who were provided with every necessary kind of equipment to expedite the work and insure safety.

In a translation of a book written by Paul de Chambrier, director general of the Mines of Pechelbronn, on "Mining of Petroleum by Shafts and Galleries" it is stated "from 1873 to 1882 the principal galleries were dug in marl or clay and it was considered sufficient to excavate the stratum slightly by means of descenting galleries. With the discovery of gushing springs the underground work was abandoned at the moment when everything was ready to come to the idea which was not carried out until 30 years later. If, in 1882, the foremost galleries had been dug into the layer of oil itself, it is probable the extraction of oil by means of drainage underground would from then on have made its appearance in the technique of petroleum. The size of the beds or layers now being worked at Pechelbronn is from one-half to 3 meters (1.64 to 9.842 feet), which permits of digging the forward galleries into the sand between wall and roof.

"This sand, very compact and saturated with oil, is not crumbly and may be classified as belonging to the stable earth formations, the more so as the 'roof' or rock resting on top of the ore or mineral is composed of a compact and very resisting marl or clay which simplifies the work of propping. Moreover, no water-bearing structures or lays have been encountered."

This probably describes the underground condition of most old field sands. Doctor de Chambrier describes at some length the sinking of the shafts by the Germans and their disappointment upon reaching the oil sands at finding no evidence of oil. They had expected to encounter flowing gas and oil and every precaution was taken against fire and asphyxiation. But when the oil sands were reached they seemed to be devoid of oil or to quote "when the shaft reached the bed, it was considered strange that neither violent gases, nor, what was more serious, the expected oil was not found there in abundance.

"It was, however, decided to dig galleries into a bed of bituminous sand, the height of which varied from 2½ to 3 meters, (8.2 to 9.84 feet). At the end of several days, oil was seen oozing out everywhere. After three months of working forward in the galleries, the value of the crude oil which had flowed out by simple seepage had amply covered the expense of the digging."

In regard to the depletion of energy in the formation Doctor de Chambrier has this to say: "Underground conditions will be entirely different as soon as the pressure become changed. A drilling which reaches a bed, causes the gas in solution or in suspension in the oil, to effervesce. Its force of expansion is transmitted in all directions, but it cannot escape through the small opening which offers itself, except by pushing before itself the petroleum with which the ground or structure is saturated, and which separates it from the bottom opening of the well.

"The volatilization of the light hydrocarbons does not occur at once, except near the opening at the bottom of the well. The general decrease of pressure which the effervescence has caused, is slowly transmitted to the most distance portions of the bed. In the proportion in which the pressure decreases, a constant liberation of gas takes place, the volume of which keeps on increasing. From every drop of oil, microscopic bubbles of gas escape, which act like air pistons, as their diameter grows with the decrease of pressure. Uniting themselves, they go on their way by displacing the surrounding liquid. The entire fluid mass is thus put into motion, and this motion continues to be produced during the years that the working of the well lasts. However, it has a tendency to slow up as the production of the well decreases.

PART PLAYED BY GAS

At last the extraction of oil by pumping, comes to a point where it ceases to pay expenses and the well is abandoned. The final result of all this work on the part of the gas, has not been to drive the oil into the vicinity of the wells, as it was the case at the beginning and when the bed of sand was yet almost entirely saturated with oil, but it has been rather, to prevent the petroleum from accumulating in the lower portions of the stratums. As a matter of fact the gas bubbles try to lift themselves vertically in order to gather in the upper parts where there is the least amount of oil. As soon as the bed ceases to be entirely saturated, a vacuum is produced under the ceiling or roof, of which the gas, which seeks the easiest way of escape, takes advantage to move in the direction toward the well. This continual rising of the gas, the bubbles of which are constantly renewed, while it lifts the oil from the bottom to the top, tends to keep the petroleum in suspension in the porous structure and to prevent its normal flow. To this is added the effect of the capillarity of

Block of oil sand removed from mine located near Electra, Tex.

the porous strata, which, in itself, retains the large quantities of hydrocarbons which we have called the adhering oil.

"At the moment, when the working of the well is given up, a condition of equilibrium is established in the completely compressed sand of the bed. The viscous oil exists there in the form of isolated little drops among the grains of sand and separated from one another by the immovable globules of gas, whose surface tension is an obstacle to the flow of the liquid. The reduced pressure of the gas does not permit it any longer to move along the very minute channels of the bed and likewise, does the oil not succeed, by its own weight, to overcome the resistance caused by friction in the capillary openings between the sand and obstructed by the globules of gas.

OIL BECOMES NONRECOVERABLE

"It follows therefore that considerable quantities of oil become nonrecoverable, as they were unable, during the time that the well was being worked, to reach such a well when far away; a well which Mr. de Launay has humorously compared with the eye of a needle.

"What will take place if the bed is attacked with drainage galleries or tunnels? The hydrocarbons will again take up their activities, because the state of equilibrium is broken, and the gas bubbles which can freely escape, will rise slowly from the walls to the roof of the bed. When a constant pressure is followed by a general depression, then the flow, which up to now, has been constantly renewed with the gas, will cease to function. Since the liquids do not any longer have to overcome this obstacle they will slowly flow into the lower pockets and connect with the current which is formed above the wall and which brings the oil slowly into the drainage established by the galleries. Thus, contrary to that which took place while the bed was not in free communication with the air, the steady departure of the gas facilities in its upward rush the flowing of the oil toward the bottom. The liquid as well as the gaseous fluids continue, separately, their parallel journey toward the galleries, but the methane and the vapors of kerosene being shut up between the roof and the surface of the sheet of oil still act against this latter with a certain vertical pressure. To this vertical force is added the hydrostatic pressure of the oil, which latter, likewise seeks to flow toward the face of the cut or tunnel. It is the resultant of these forces which, as we have already seen, gives to the current of oil the form of a curve in the vertical plan, which lies in the axis of a working gallery or tunnel.

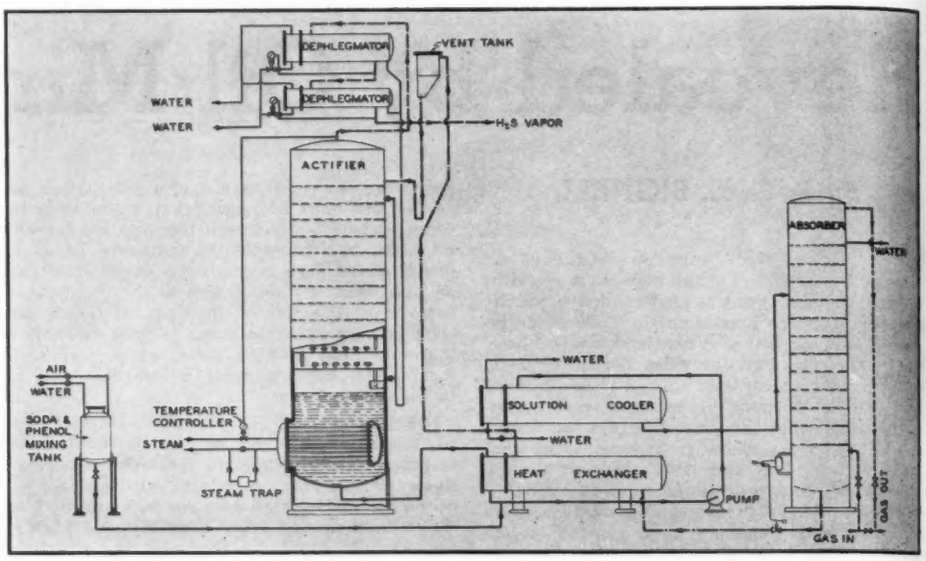
"We stress this point that the height, visible from the layer of the seepage, does not furnish any indication as to the level of the surface of the oil in the interior of the bed."

It must be remembered that Doctor de Chambrier made the above statements after he had had opportunity to make numerous observations at the face of the oil sands where seepage was taking place. He carried on experiments to determine pressures existing back of the sand face by drilling horizontal holes into the sand and inserting tubes connected with manometers into these holes and noting the registered pressures.

In an oil mine near Electra, Tex., E. M. Carter, a mining engineer, also made similar observations. It was noted when the shaft penetrated the oil-bearing sand there was a lack of visible oil but later oil did appear in the form of a myriad of minute bubbles all over the face of the sand and gathered in drops and ran to the base of the sand face. Gradually the upper portion of the exposed sand became coated with a waxy precipitate which shut off the flow of oil.

The accompanying picture shows a 500-pound piece of the oil sand taken from the Electra oil mine after it had been in the office of Roy B. Jones, in Wichita Falls, Tex., for some time. When first removed from the sand body Mr. Carter reports this piece of rock was white. It will be noted that there is a white spot on the lower part of the block where the outer face was freshly broken before the picture was taken. This sand sample illustrates the observations of Doctor de Chambrier regarding the escape of oil to the surface of the tunnel when equilibrium is disturbed.

These observations are recited to give the owner of the small well some idea of underground conditions in stripper wells where the reservoir pressures have been dissipated. The remaining oil, sometimes as much as 80 per cent of the original content, is locked in the pores of the sand. In Pechelbronn about 17 per cent of the oil was recovered by drilling wells when oil mining was undertaken. After the oil started to seep about 32 to 36 per cent of the remaining oil was recovered and the balance of the oil was secured by taking the sand to the surface and washing it. Secondary recovery methods will recover from 40 to 60 per cent of the oil left in the formation after depletion of the drilled wells but to recover all of the remaining oil it is probable oil mining will be necessary.



Flow diagram of the phenolate process for purification of natural and refinery gases

Atlantic to Install Process for Purifying Refinery Still Gas

The first plant in the East which will purify refinery gas by the new Koppers phenolate process is to be erected soon for the Atlantic Refining Co. at its Philadelphia, Pa., refinery by the engineering and construction divisions of Koppers Co. A similar plant, the first to use this patented process, was erected by Koppers at El Segundo, near Los Angeles, Calif., for the Standard Oil Co. of California, and was put into operation August 6, 1936. By this process the gas is prepared for treatment in a polymerization unit for production of liquid hydrocarbons, it being purified to the extent of 95 per cent to 99.8 per cent.

The plant to be built for the Atlantic Refining Co. will be able to recover the hydrogen sulfide from 22,000,000 feet a day of refinery still gases at 225 pounds pressure. The hydrogen sulfide may be converted to sulfuric acid and the purified still gas will be further processed by polymerization.

DESCRIPTION OF PROCESS

The purification system consists of an absorption stage and an actification stage, through which the phenolate solution is circulated continuously. This solution has an extremely high carrying capacity for hydrogen sulfide, amounting to 2,000 to 4,000 grains per gallon. As a result, it is necessary to circulate only 5 to 10 gallons of solution per 1,000 feet of sour gas. This very low circulation rate is one of the reasons for the low operating expense and the simplicity of equipment required in comparison to other liquid purification processes.

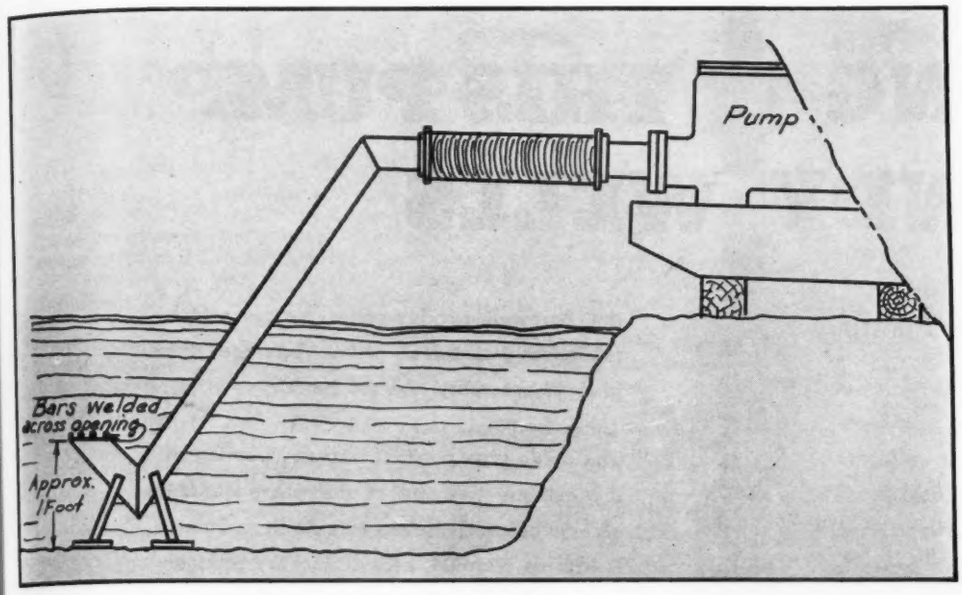
Referring to the flow diagram, the hydrogen sulfide laden gas enters the absorber at the base, passes up through the bubble-cap trays and leaves at the top, stripped of 95 per cent of its hydrogen sulfide. The solution leaving the bottom of the absorber, saturated with hydrogen sulfide with respect to the incoming gas, passes through the heat-exchanger tubes to the top tray of the actifier. It flows down over the actifier trays, countercurrently to the stripping steam which is generated in the reboiler at the base. Sufficient indirect steam is used to effect the desired degree of actification of the solution. This, in turn, is determined by the maximum residual hydrogen sulfide desired in the exit gas.

The actified solution flows from the reboiler through the heat-exchanger shell, is further cooled in the solution cooler, and is then pumped to the fourth trap below the top of the absorber. The absorption cycle starts again at this point.

Hydrogen sulfide laden steam passes from the top of the actifier to the dephlegmator shell and thence the hydrogen sulfide is forced, by the actifier pressure, to the acid plant burner or other point of disposal. Condensate from the dephlegmator returns to the actifying column.

Fresh water is added continuously to the top tray of the absorber. The three top trays comprise, in effect, a water scrubber to recover chemicals which have been entrained or evaporated from the solution. It is necessary, at periods of several days, to replenish chemicals lost from the system, and a small mixing tank is provided for this purpose. The caustic soda and crude phenol used in the process are inexpensive. This system is completely adaptable to conditions peculiar to individual projects.

OPERATING IDEAS



Foot Welded on Suction Line to Protect Pumps

A drilling contractor in West Texas has devised the method shown in the accompanying diagram to keep the suction line from picking up gravel from the pit bottom. A foot was welded on the line and due to the vertical position of the line, the suction intake is kept 12 inches from the bottom of the pit at all times. Welding bars are welded across the open pipe to act as a strainer and prevents materials from entering the suction line.

Strainer on Pickup Line

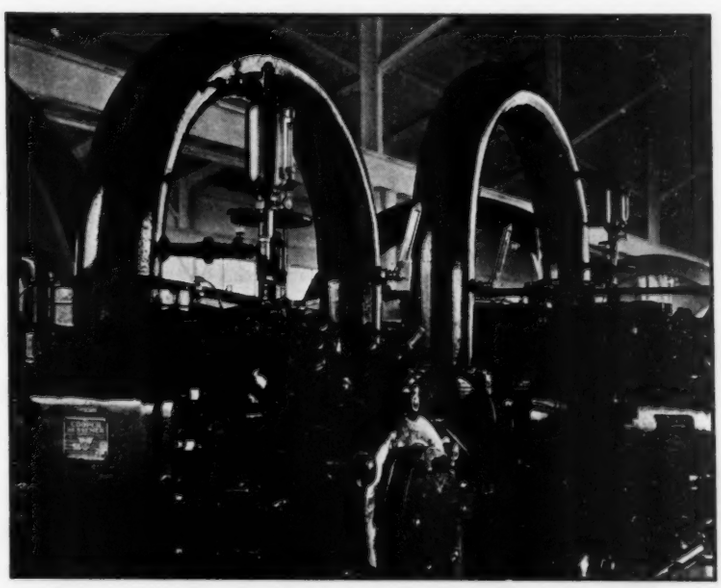
To prevent its lines from becoming clogged with debris or materials often found present in lease stock-tanks, a pipe line company operating in the Olympic pool north of Wewoka, Okla., installed strainers on lines leading from the lease tanks. The strainer is made from 12-inch pipe, reduced and welded into the 4-inch line. In the center of the bowl is a perforated plate; the holes being three-eighths inch in diameter. Two large bull-plugs on top of the bowl give access to the plate so that it may be cleaned.

Air-Operated Valves on High-Pressure Line

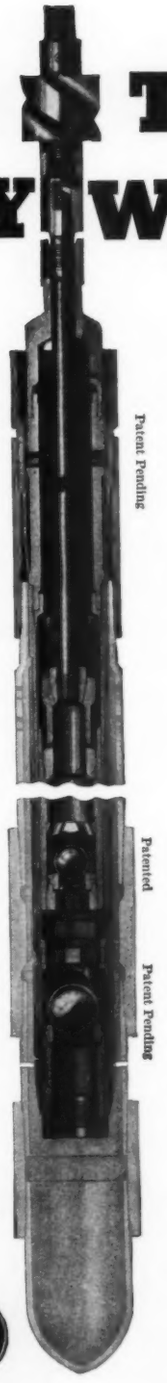
In order to do away with the necessity of having to climb down into the pit in which the valves on the high-pressure gathering lines were located every time it was necessary to regulate the valves, a gas company in the Rodessa field has installed air-operated valves with a central control point. Large air cylinders were manufactured in the company shops and by means of small lines running to each of the cylinders a valve can be completely closed or opened in a second's time. The quick-opening valves are operated by a ratchet attached to the piston-rod and a quarter-segment gear, and after the valve is regulated it locks in place until a change is desired.

Lubricating Compressors Handling Wet Gas

A large gas company boosting gas in the Rodessa field to their gasoline plant some few miles away encountered trouble in lubricating the cylinders of the large compressors due to gasoline contained in the gas dissolving all oil lubricants applied. After experimenting with various lubricants for some time the company compounded in its laboratory a liquid soap which was found to successfully lubricate the cylinders and was not effected by the gasoline present in the gas. Each cylinder was then equipped with a lubricator, made in the company shop, holding sufficient fluid to lubricate the cylinders for approximately 12 hours before it becomes necessary to refill them.



HANG THIS PUMP IN SANDY WELLS



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DEEP WELL PLUNGER PUMPS **AXELSON** SUCKER RODS

Pourpoint of Lube Oils Reduced by Use of Dewaxing Assistant

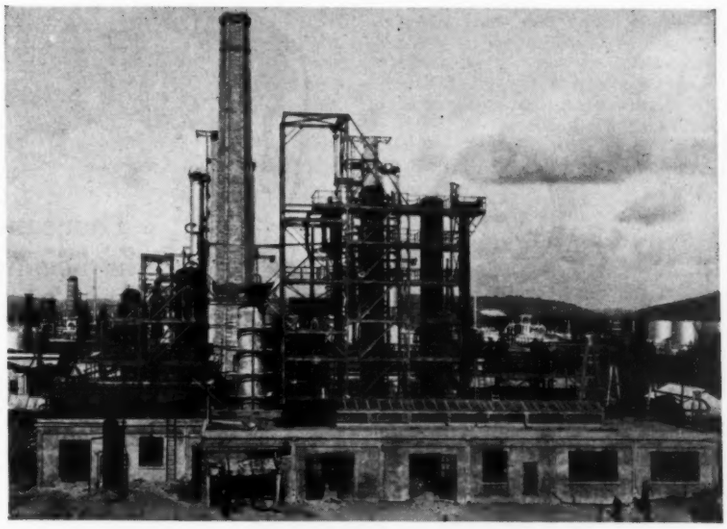
In experiments recently carried out at the Port Jerome refinery of the Standard-Franco-Americaine de Raffinage, it has been found that the addition of Paraflow to bright stocks prior to centrifuging permits of higher centrifuge throughputs, gives greater yields, and the resulting oils possess less tendency to cloud at low temperatures. This development proceeded directly from theoretical considerations.

Since the discovery some years ago that such hydrocarbons as Paraflow when added to oils markedly affect the wax phase which separates when the oil is chilled, studies have been under way to utilize this characteristic to advantage in refinery operations. The addition of low percentages of Paraflow (1 per cent or less) to motor oils and similar lubricants as a means of lowering their pourpoint is already well established in refinery technique. It has also been apparent for some time that advantage could be taken of the peculiar properties of Paraflow in dewaxing operations.

In solvent dewaxing, where naphtha or any of the newer solvents are employed, chilling must be conducted with care lest upon too rapid cooling a wax phase separates which is difficult to settle, centrifuge or filter from the solvent. Such difficulties result when the wax crystals occlude or adsorb considerable oil so that not only is separation poor but considerable oil is lost with the wax.

The addition of Paraflow to lubricating oils, such for instance as finished motor oils, lowers their pourpoint, presumably by preventing the formation of a gel structure as the oil is chilled. Normally, as the wax crystals separate they adsorb sufficient of the liquid oil phase to form a lattice-like structure which ultimately possesses considerable rigidity. In the presence of Paraflow, the adsorption of the oil is lessened with the result that the wax crystals have no more tendency to build a lattice than would so many grains of sand suspended in water. Were it not for the similarities in the specific gravity of the wax crystals and the oil, the wax would quickly settle or float to the surface.

In solvent dewaxing the latter actually occurs. By very careful chilling in normal operation, wax crystals are formed which are sufficiently free of adsorbed oil that they may be filtered, settled or centrifuged from the solvent with fair success. By the addition of Paraflow, however, it would be expected that the formation of oil-free crystals would proceed with greater faculty and, consequently, it should be possible either to chill the solution more rapidly and still obtain good separation, or else to achieve better separation under constant chilling conditions.



Standard Franco-Americaine de Raffinage's combination unit, gasoline rerun unit and stabilizer

This theory was put to the test at the Port Jerome laboratories of the S.F.A.R., and in preliminary tests on a red engine oil it appeared that some advantages might thus be gained. The work was, therefore, carried out more carefully, operating upon a Colombian cylinder oil. This was prepared from a distillate of 210° Saybolt viscosity at 210° F., which had been phenol extracted, rerun over caustic and clay treated for color. The finished stock which has been dewaxed had the properties shown in Table 1.

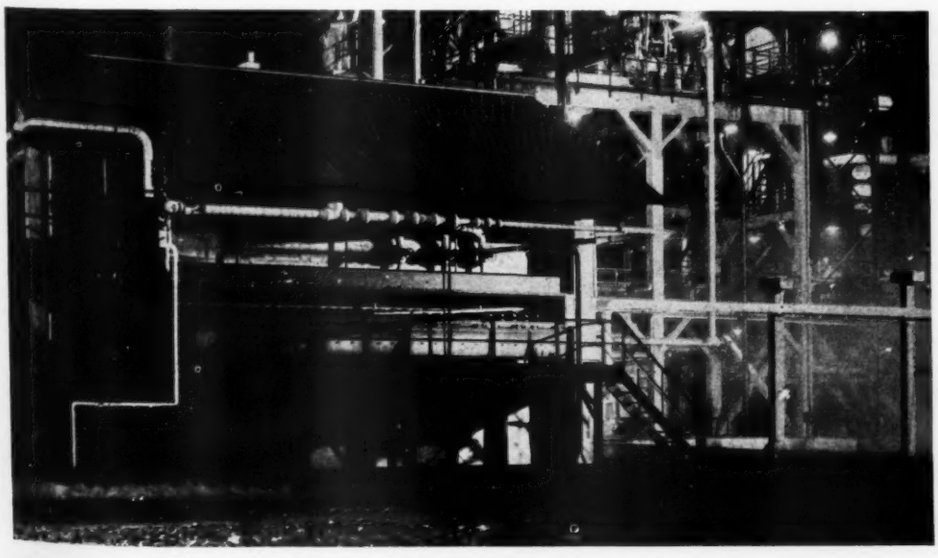
TABLE 1—INSPECTION OF FEED STOCK

Gravity °A.P.I.	24.3
Saybolt viscosity at 210° F.	145
Viscosity index	75
A.S.T.M. pourpoint, °F.	45

This stock has been dewaxed in trichlorethylene solution using six Separator Nobel centrifuges of the WX-7 type. Run No. 1 made on the straight stock dewaxing to 20° F. pour; No. 2 contained an added 0.1 per cent by weight of Paraflow and was dewaxed to the same pourpoint; No. 3 also employed 0.1 per cent by weight of Paraflow, but the dewaxing was carried to 10° F. pourpoint. Operating conditions and the inspection of the finished oils are given in Table 2.

TABLE 2—OPERATING CONDITIONS OF DEWAXING RUNS AND QUALITY OF FINISHED OILS

	No. 1	No. 2	No. 3
Paraflow, per cent by weight	0.0	0.1	0.1
Trichlorethylene in mixture, per cent by volume	53.5	46.6	52.5
Temperature of dewaxing, °F.	—8	—5	—8
Hourly throughput per cycle day, bbls.	19.75	25.16	22.67
Yield, per cent by volume	94.5	96.0	95.2
Inspection of oil:			
Gravity, °A.P.I.	24.1	24.0	24.1
Saybolt viscosity at 210° F.	150	144	147
Viscosity index	75	74	75
Flashpoint, °F.	570	560	575
Pourpoint, °F.	20	20	10
Cloud point, °F.	25	25	0
Inspection of wax:			
Saybolt viscosity at 210° F.	97	87	89
Melting point, °F.	126	132	130



Initial crude distillation unit in the Port Jerome, France, refinery

It is apparent that the results shown indicate marked improvement to be obtained when Paraflow is added. Thus when operating to the same pourpoint a 27 per cent increase in throughput is realized and, furthermore, the yield of dewaxed oil is raised. Although amounting to but 1.5 per cent when operating to the same pourpoint, this is equivalent to a 25-30 per cent reduction in the wax produced. Quite possibly in a dewaxing operation where a higher percentage of wax must be separated, or where but poor separation is obtained, a far greater improvement in yield could be demonstrated. It should furthermore be noted that these advantages for Paraflow have been demonstrated under conditions where good operation was already being obtained regularly. Check runs on centrifuges of the WX-736 type have given

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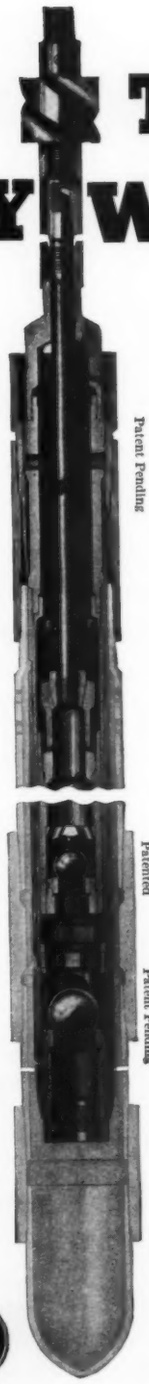

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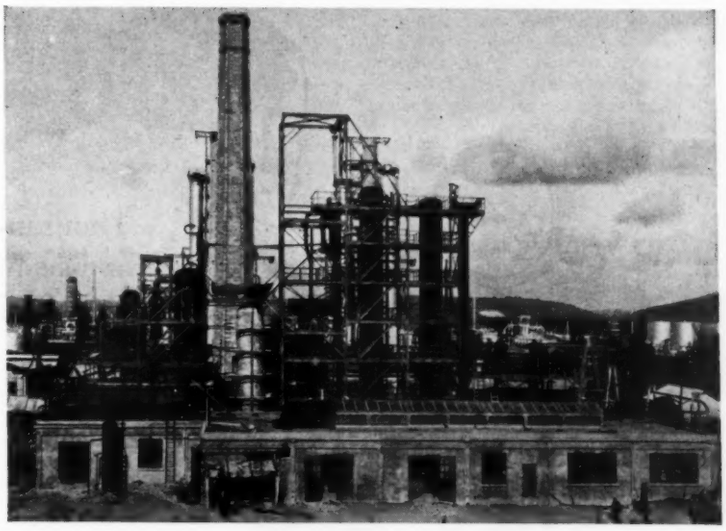

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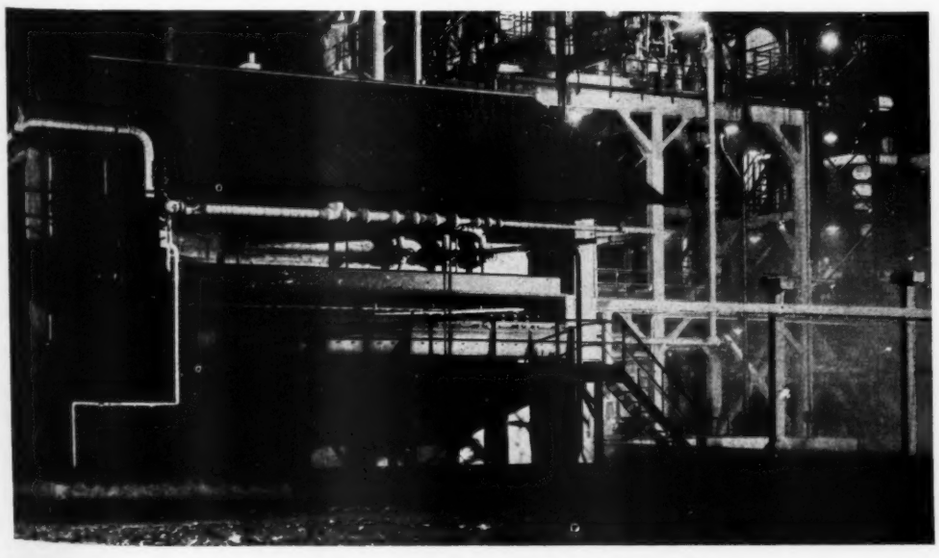

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data correlating well with the above and indicate that these results are reproducible.

Not only have yields and throughput been increased but, as shown in Table 3, the quality of the dewaxed oil as determined by their tendency to cloud at low temperatures has been improved. Most of the oils dewaxed in the presence of Paraflow can be stored at 32° F. far longer than the conventionally obtained products before any haze or cloud is noticed.

In addition to the improvements noted in the quality of the product and in the centrifuge operation, better performance has also been realized in the chilling. Much longer runs have been possible as a result of reduced wax deposits at this point and, in consequence, the service factor has been raised from 80 to 90 per cent. As a corollary to this, it has been found in some cases to be actually possible to free the chiller coils of deposited wax by charging a waxy oil (diluted with trichlorethylene) to which has been added a small amount of Paraflow (0.1 per cent). This benefit has not been obtained in every case but has been reproduced with sufficient frequency to warrant a more extensive study.

It is apparent from the results recorded above that the use of Paraflow in dewaxing operations of the type reported here offers distinct advantages by making possible greater throughputs, higher service factors, increased yields and better product quality. How extensively this agent can find application to other oils, other solvent combinations and other types of wax separation warrants active investigation.

TABLE 3—SUPERIORITY OF CLOUD POINTS OF DEWAXED OILS

	No. 1		No. 2		No. 3	
Paraflow used in dewaxing, per cent	0		0.1		0.1	
Type of centrifuge	WX-7	WX-736	WX-7	WX-736	WX-7	WX-736
Pourpoint, °F.	20	15	20	15	10	5
Cloud point, °F.	25	20	25	10	0	—5
Hours before cloud point appeared when in storage at 32° F.	Less than 5	Less than 5	Less than 24	192	More than 192	More than 193

Drilling-Time Curves for Analyzing Pay Strata

By T. P. SANDERS

Some companies drilling new wells in West Texas and southeastern New Mexico make drilling-time curves for the section of the hole penetrating the strata in, and in the vicinity of, the productive zone. With these curves, together with data obtained from drill-stem tests, electrical well logs, heavy residues from cuttings, and from cores, they are able to make a very comprehensive analysis of the condition of the productive zone and the adjacent section. This form of analysis is adapted to fields with limestone pay horizons, since it is in this type of pay that drilling-time curves and the study of cuttings by the heavy residue method are of value.

In making up drilling-time curves it is common practice to plot the time required to drill each 5-foot section of the hole. These data are usually kept by the driller. A constant weight is carried on the bit by keeping the weight recorder at 3 points in most cases. Since the drilling is much faster in porous lime than in dense unproductive lime, the completed curve shows the condition of the reservoir with respect to relative porosity. In the accompanying illustration of a well near Eunice, N. Mex., the drilling-time curve is shown for the lower 173 feet of the well by the narrow dotted line at the left.

POROSITY CURVES AS CHECK

When Schlumberger electric-coring tests are made on wells, as they often are in this region, the porosity curve serves as a check on the drilling-time curve. The resistivity curve shows the nature of the fluid in the strata adjacent to the hole, so that it can be determined whether sulfur water or oil is occupying the pore space. Electric-coring records alone give fairly complete formation data, so it is in cases where Schlumberger tests are not taken that drilling-time curves are of greatest value.

The use of drill-stem tests in the lime area has greatly increased. They are used mainly to determine the most suitable depth at which to set casing above the pay zone. Their records also prove to be of considerable value in analyzing the position and the characteristics of the reservoir. Drill-stem tests are usually made before setting the 7-inch flow string, so that the hole being drilled is 9 inches in diameter, and 4-inch drill pipe is in use. The first step toward the test is to drill the rathole, which is usually done with a 6-inch bit.

It is necessary that the shoulder left where the hole is reduced from 9 inches to 6 inches is about the same width on all sides. Special bits are generally used to center the rathole in starting it. Nine-inch reamers help to keep it straight. The rathole is drilled 50 to 150 feet, then the shoulder where the hole is reduced is smoothed by a reamer spaced at the desired distance above the 6-inch bit. The drill-pipe is then removed, and if the rathole has penetrated oil- or gas-bearing strata, the drilling fluid in the hole controls the pressure.

The drill pipe is then run back in the hole with a cone packer which forms a seal on the shoulder. Below this are perforations. The pipe is closed at the bottom so that it reaches the bottom empty. After the packer is seated, the pipe is opened. Sometimes this is done by dropping a go-devil which breaks out a cast iron disc near the bottom of the pipe, and sometimes the casing is turned to open a patented valve inside of the packer. Oil and gas in the rathole are then produced through the drill-pipe. If no oil is produced the hole is deepened before setting the 7-inch oil string. Because fairly large sections of the strata are tested by each drill-stem test, the information gained is generally in itself inconclusive, in respect to reservoir characteristics. Results of three drill-stem tests are shown at the lower right in the accompanying illustration.

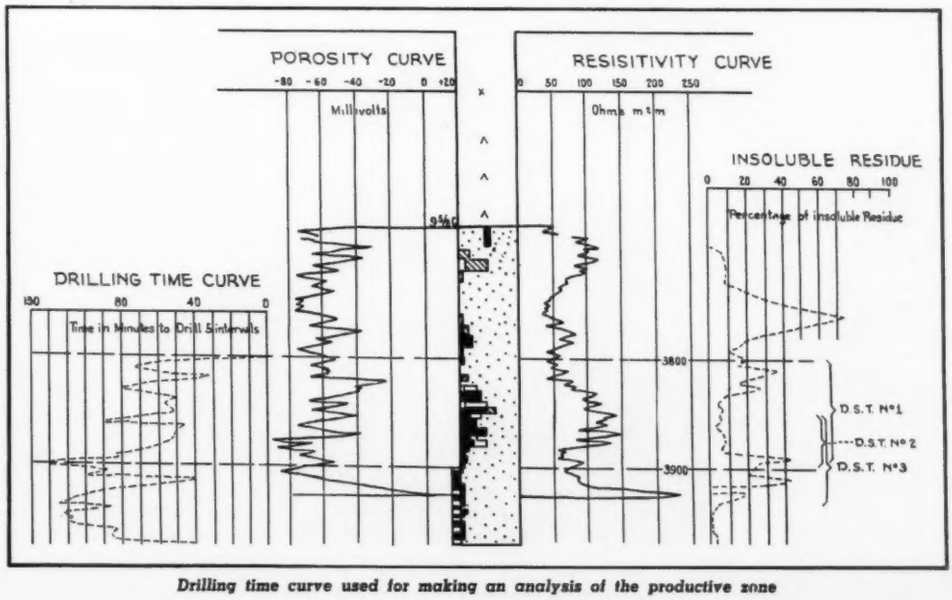
Insoluble residues from well cuttings are of great benefit for correlation purposes, and also for their bearing on reservoir conditions. The sand content in a limestone reservoir affects the productivity. Insoluble-residue analysis are made by dissolving the lime from the cuttings with hydrochloric acid, and determining the per cent of each of the insoluble materials remaining. In the Permian Basin area the common residues are sand, shale, anhydrite, gypsum, and pyrite.

PLOTTING RESIDUE DATA

In the illustration the quantities of the various residues are plotted in the well section with the total weight of the residues considered 100 per cent. In other words, no lime is shown in the section, although most of the cuttings are composed chiefly of lime. The scale at the right shows the per cent of insoluble residues in the sample; the remainder is lime and other carbonates. The insoluble residues are often plotted in a manner which is less confusing by showing the lime in the same section so that the total weight of the sample is considered 100 per cent. However, if that plan is used it is found impossible to show residues amounting to less than 2 per cent, and these small quantities are often of great importance for correlation purposes.

Cores were taken in the well shown in the illustration. The core record is shown beside the well section at the left. About 70 feet of strata was cored. The solid black shows the recovered portions of this section. Where cores are taken with accurate measurements and good recovery, some of the other data shown in the illustration is rendered quite useless. However, the expense of coring is generally too great to permit its use through the entire section for which data is desired.

Other information, such as initial production, date of completion, acid treatments, and shot records, are also recorded on this log, so that in case well changes—such as plug-back work—are considered sometime in the future the drilling data are readily available.



Drilling time curve used for making an analysis of the productive zone

Method for Controlling Boiler Feed-Water Level Developed

By JULIAN CAMPBELL
Consulting Engineer*

The boiler battery is the heart of the gasoline plant. A steady, dependable supply of dry steam at constant pressure is vital to operating a plant at maximum efficiency. If steam is used as a means of circulating the absorption oil, either a slight drop in pressure or an increase in the moisture content will slow down the circulation rate. Even a slight change in the rate of oil circulation will adversely affect extraction far beyond any accounting through known laws governing absorption. . . . .

One of the largest factors in maintaining steady steam-flow is steady boiler-feed. The best assurance of dry steam in your main is the carrying of a steady low level in the gauge glass. . . . .

GASOLINE EXTRACTION AFFECTED

Some months ago the writer became very much concerned over the erratic variation in the extraction curve of a gasoline plant under his supervision. Having checked everything through the absorption plant, he found there was nothing to indicate the cause, save, possibly, the oil-rate chart. This was not as smooth as it might have been. Since reciprocating pumps were used for oil circulation, the boilers were checked for constant quality of steam and uniformity of pressure. Formerly these boilers had been equipped with automatic feed-water level controllers. However, since the manufacturer had gone out of business and no repair parts could be obtained, the apparatus in time required all the attention common to orphan products. Pampering in this particular case called for regrinding of the valve seats until they were entirely worn out. At length the inevitable happened; the regulators were taken out of service and the boilers were operated once more by hand control.

Self-preservation is the first law of nature, so it is natural for any fireman to carry his water high for safety. High water, nevertheless, means wet steam, and wet steam slows down pumps, cuts lubrication; wears out liners, rings, and pistons; and plays havoc in general with packing. Moisture in steam has no latent heat value and is conducive to leaks and pipe disintegration, and throws an extra burden on separators and traps.

When water rises too high in hand-operated boilers, it is customary for the operator to blow the boiler down—a procedure that not only causes a great waste of water, but a waste also of all the heat built up in that water. . . .

It was decided that what was needed was a new design of regulator, more sensitive and more positive than any then available on the market. Consequently, we set out to design such a regulator.

As the basic principle of our new design we adopted the inclined thermostatic tube, primarily because of the latent power available for the motivation of the feed-water valve. This power is restricted only by the elastic limit of the metal utilized. Since the effectiveness of a thermostatic tube depends on its terminal temperature difference, the initial step was to install a simple tube, equip it with thermometers and determine the difference. Such a tube, 42 inches in length, with a slope of 1 to 12, was set up, with the water level cutting its mid-point. The boiler was of 150 horsepower, operating at a pressure of 145 pounds, carrying a 3½-inch level in a 12-inch gauge glass. The average temperatures, taken hourly over a 72-hour period, were 356° F. at top of tube and 268° F. at bottom.

CONTRIBUTING FACTORS

This 88-degree difference seemed surprisingly low, and accounted for the poor performance of this type of regulator. Just why was this difference so slight? Obviously, there are two contributing factors. First, the steam lead coming down from the top of the column is usually uninsulated, and, being a small line, permits condensation of a considerable amount of steam. The resulting hot water has no path to follow, other than down through the thermostatic tube. As a consequence, the lower end heats. Second, the steam in the upper end of the tube heats it very hot, and, brass being an excellent conductor, this heat is transmitted to the lower end. The only offsetting factor to nullify this tendency of the lower end of the tube to heat up is the small amount of radiation from the tube's surface.

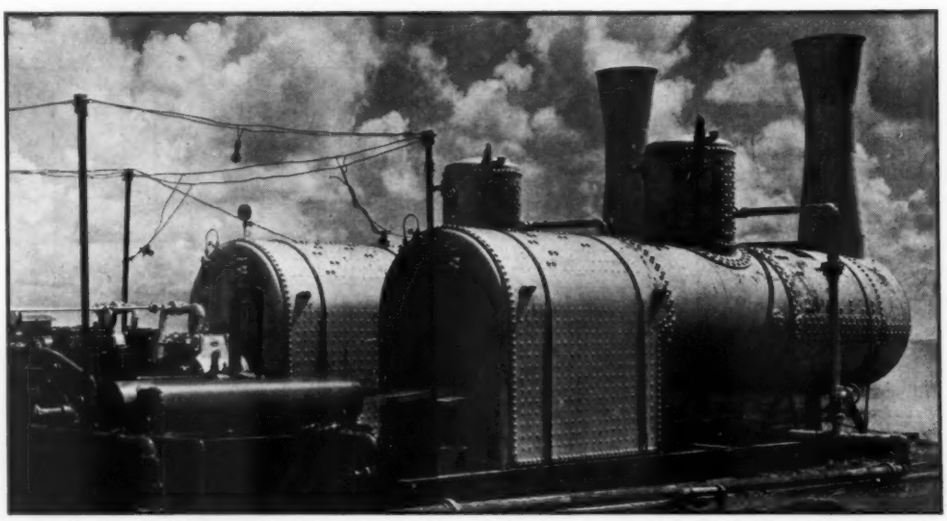
In an effort to correct this condition, as our first move we designed an upper end-casting with a catch-pocket underneath, and ran a copper tube from this drip entirely around the thermostatic tube, connecting it with the water return at the lower end. This hot by-pass dropped the temperature of the lower end of the tube 31° F. Encouraged by this marked improvement, and observing that our level now stayed within the range of the middle 16 inches, we decided to drain the upper 12 inches of the tube. This reserve, which is normally filled with steam, condenses a considerable quantity of hot water. By cutting in a drip-pocket 12 inches down and connecting it to our hot by-pass, we gained another 19 degrees. However, the lower end was still running hot, owing to the conductivity from the steam. We attempted to cut off this transfer by inserting an insulating flange about 14 inches from the lower end. The results were rather disappointing, in that the terminal temperature was lowered only 11 degrees. It was difficult to find any material for the gasket with a low coefficient of heat transfer, yet possessing sufficient mechanical strength to be safe. Abandoning the idea of cutting off this heat, we decided to dissipate it by the application of fins to the lower section.

FINS FOR HEAT DISSIPATION

This idea called for considerable experimentation with different types and diameters of fins and with variation in their spacing. The thickness of the metal has a decided bearing on radiation. One must compromise between thinness and mechanical strength. We finally developed a very thin fin, corrugated to meet strength requirements. Obviously, the heat-dissipating surface was materially increased.

The first experiments in finning brought forth some surprising discoveries. The concluding experiments resulted in a fin so spaced as to lower the terminal temperature another 100° F. We now had a tube two and a half times as sensitive as the simple brass pipe, and the next consideration must be given to the method of applying its changes in length to feed-water valve motivation.

The cantilever principle offers two decided advantages. First it permits considerable multiplication of the length changes depending on the ratio of spread of the two members to their length and the translation of this multiplied length change into vertical movement. Secondly, there is the increment in exposed, or flooded, tube length, which is obtained by



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*Before California Natural Gasoline Association at Los Angeles, Jan. 7, 1937.

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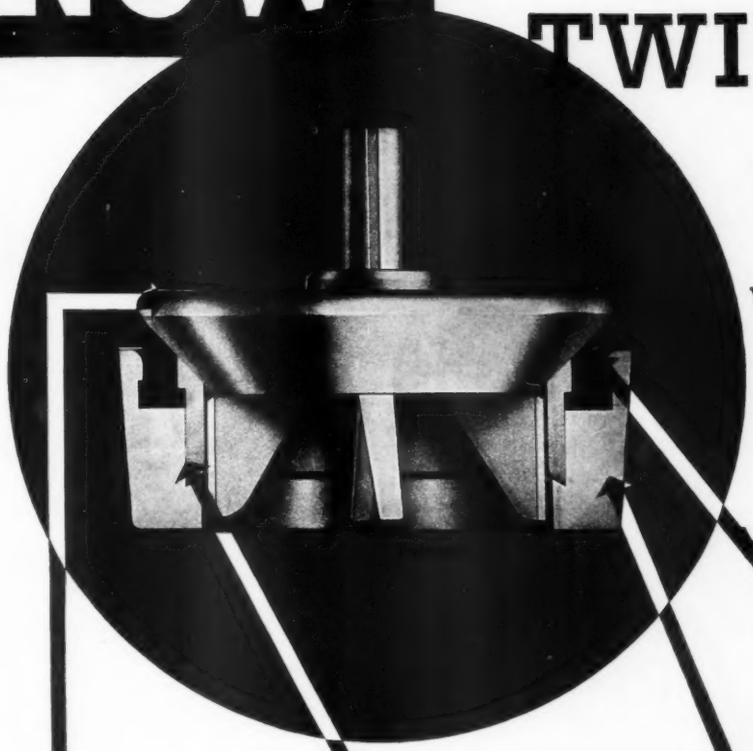

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raising or lowering the tube. This will be brought out by example later in the paper.

Forty-two inches was adopted as the tube length, and the slope fixed at 1 to 12. The spread is such as to give a multiplication of 8.

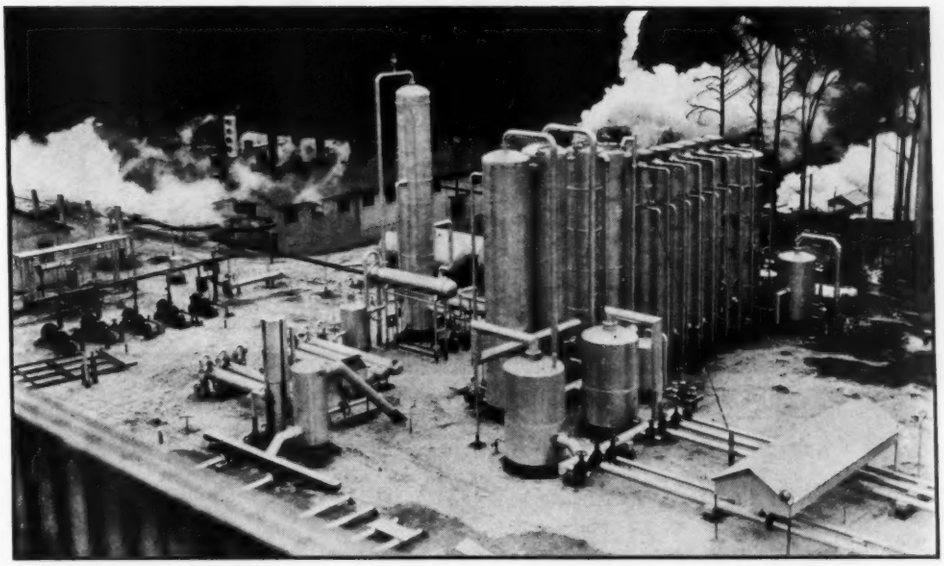
The next movement was to determine by experiment the proper type and style of valve to use in the feed-water line. After trying out various types, a single-seated, beveled-disc lever valve was decided on. This valve gives a positive shutoff and, in this respect, is preferable to a balanced valve, because the latter, to shut off perfectly, must be adjusted to a rather narrow range of feed-water temperature. There is ample power in the thermostat to close the valve against the differential pressure, which is small, usually between 20 and 50 pounds. Most of the boiler batteries in the industry, except on drilling wells, use governors on their feed pumps, which are set within this range. We have, however, successfully operated the controllers on drilling wells without governors when the firemen insisted on opening wide the steam throttle valve on the pump, and the pump when the rotary is idling will build up pressure against the valves of over 400 pounds.

When the development work was completed and the regulator was satisfactory, we built nine of them and installed them on the plant boilers. Levels were set at 3 inches in the glasses and, with no other changes in the plant or in the field to account for it, the extraction increased one-tenth of a gallon. This meant a production increase of 1,200 gallons per day. A savings in water, fuel and pump maintenance was effected, and the steam output of the boilers is steadier than it has ever been, as is evidenced by the almost perfect circles recorded on all the operating charts.

SMALL VALVES USED

We use very small valves. Regulators, in which the valve-stem is attached directly to the tube, can open the valve an amount only as great as the actual expansion in the tube. Since this amounts to only a few thousandths of an inch, a relatively large valve must be used in order to secure enough peripheral opening to permit passage of the required amount of water. The high velocity through this narrow slot is conducive to wire drawing and scoring of the valve and seat. When bad water conditions obtain, there is danger of complete stoppage through liming up. With thermal efficiency increased to over 2½ and a mechanical advantage of 8 through utilization of the cantilever principle, the new controller has more than 20 times as much movement available for valve operation. Consequently we can employ a much smaller valve and open it to a considerable extent. A half-inch single-seated valve is ample for feeding a 150-horsepower boiler with a 20-pound differential; that is, with 20 pounds greater pressure on the pump discharge than that shown on the boiler pressure gauge. For two reasons we do not use any size smaller than a 1-inch body. First, small piping to the valve is not sufficiently rigid and is likely to give, introducing lost motion between the thermostat and the valve, which lessens sensitivity. Second, a half-inch valve in a 1½-inch or 2-inch line looks out of proportion and takes a lot of explaining. However, anyone with experience in hand-firing a boiler knows that it takes only a few notches on the wheel to meet the full steaming requirements when a full-line size of valve is used, and veteran firemen often cut in a quarter-inch or three-eighths inch globe throttle as a bypass around the feed valve for fine adjustment. With a 25-pound differential, a half-inch single-seated valve, open one-sixteenth inch, will pass sufficient water to meet the full load on a 150-horsepower boiler; and, with sufficient movement to open it three-eighths inch an ample factor of safety is provided.

Every boiler set-up presents a different problem in level control. Several years ago we ordered back-pressure regulators by merely stating the line size and the pressure we wished to carry. Today the sales engineer whom we contact wishes to know what the throughput is in nature and quantity, whether the flow is steady or fluctuating, if it is corrosive, whether or not at times we wish complete shutoff, and other pertinent information. Supplied with this information, the sales engineer will deliver a regulator that will hold steady pressure and record on a chart a perfect circle.



Arkansas Fuel Co.'s Rodessa gasoline plant recently enlarged to 60,000,000 feet capacity

So it is with boiler feed-water level control. If you want to hold levels within a quarter of an inch, there are a lot of factors that must be taken into consideration. We should know whether it is a single boiler or a battery. If it is a single boiler, a very small lever valve may be placed in the steam line to the pump and controlled by the thermostat. With this set-up no pump governor is needed, since the pump speed at all times is just fast enough to meet the steaming requirements. If the plant consists of more than one boiler, a controller is set on each. A pump governor, while not absolutely necessary, is desirable, because of the saving effected in fuel, wear and tear on liners, pistons, rings, packing, and gaskets. From a safety angle, also, they are highly desirable, since most boiler feed-pumps are capable of delivering against 400 pounds, which is rather high for 200-pound and 125-pound fittings, which are often used. We should know whether the boiler is fire-box, H.R.T., or water-tube, and whether the load is steady or fluctuating. For extremely steady loads we reduce the movement between the thermostat and the valve. For moderately varying loads we connect direct, and for widely fluctuating loads we multiply the action. These variations are attained by attaching the rod from the thermostat to different points on the valve levers.

PROPER SETTING NECESSARY

More important than anything else, perhaps, is the proper setting of the regulator. This does not present any problem on H.R.T. or water-tube boilers, since these are always equipped with water columns. Locomotive type, or fire-box boilers, as they are called in the oil fields, have no columns. The gauge glass fittings tap the boiler shell above the crown-sheet through the head. For some reason, somebody started the practice of tapping in the return line for water regulators down on the side of the water leg. This tap-in is often as much as 20 inches lower than the lower gauge glass fitting. Sometimes this tap-in is in the front, but usually from 10 to 18 inches lower than it should be. The improper location of this tap has been responsible to a large extent for the poor performance of thermostatic controllers on fire-box boilers. Assuming that this water return is tapped in 20 inches below the bottom gauge glass fitting and that the gauge shows the level 3 inches in the glass (if the boiler is steaming heavily), the froth level in the boiler is approximately 1 inch higher. The water in the boiler is full of bubbles of steam and is frothed up about 20 per cent higher than the stable balancing column in the gauge glass. Now if we tap in at a point 24 inches below the level in the gauge glass and run a line up outside the boiler and connect it with the steam space, the level in this line would be 5 inches below the level inside the boiler. . . .

PLACING OF REGULATOR

If under the foregoing conditions we set our regulator as we would for an H.R.T., where the water column and the controller each have the same connections when the boiler was steaming heavily, the water would draw down entirely out of the tube, opening wide the feed valve; and it would not shut off until the water was out of sight above the top of the upper fitting. The only remedy for a case like this is to set the regulator 5 inches low. But then the level in the tube, provided the load varies, will run over a wide range, even assuming it remained constant in the boiler gauge. Such a condition makes for poor control, even with a good regulator.

For steady level control, the water return should tap into the boiler at the same level as the lower gauge glass fitting.

In line with usual practice, we have provided a blow-down in this water lead in the form of a T. It has been the practice to periodically close the valve in this line next to the boiler and open the blow-valve to the atmosphere. This procedure sweeps steam through the entire length of the tube. It does, on starting up a boiler, eliminate all air, which, of course, would insulate the tube from steam condensation and prevent its working. In my personal opinion, the value of blowing the regulator at short intervals is questionable. If the level is properly controlled and the boiler is not priming, comparatively pure water condensed in the steam lead and the upper working reserve runs down the by-pass and returns through the water lead to the boiler. If you blow the system down from a valve located near the point of return to the boiler, you lose all this clean condensed water and replace it by a back-flow of dirty concentrated water from the boiler. I am not convinced that it is not better to blow the tube at intervals of several days.

Of course when the steam lead and return are connected to the water column, blowing the latter, which is essential routine, will blow the regulator, and the blow-valve is not necessary.

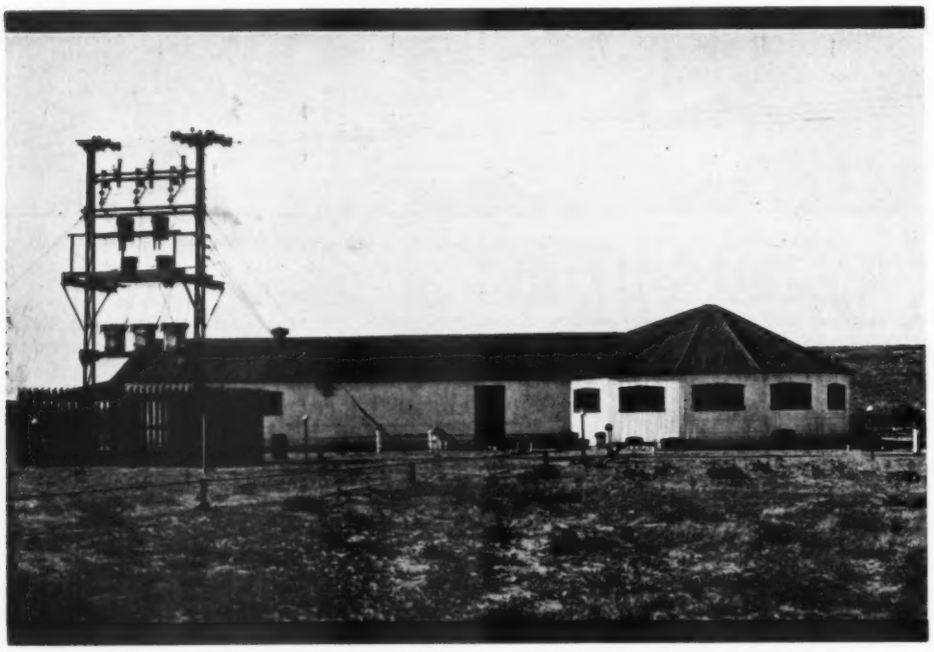
In any case, when the tube is blown with steam, it should be shut off very quickly after the steam comes out; since, if allowed to pass through for any length of time, the steam will heat up and fully expand the tube. In expanding, it opens the valve and raises the level before the tube can cool down again through radiation.

Now let us check into the mathematics in-

ELECTRICALLY DRIVEN

CENTRAL PUMPING POWER

McCamey, Texas



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volved, since this reveals some very interesting facts. To gather these data we set up the latest improved model of the controller on a 150-horsepower H.R.T. boiler. Just one-half inch below the middle of the tube a thermometer well was brazed in, a great deal of bronze rod being used to get a true tube temperature, rather than the contents temperature. Three inches below the point was a similar thermometer well, and one at each end of the tube. A 42-inch gauge glass was connected in, running the full length of the tube, with its fittings tapping into the two end castings.

The first readings were taken with the level at 3½ inches in the boiler gauge glass, which brought the level in the inclined long glass at the exact center, or one-half inch above the upper of the two intermediate thermometers.

The temperatures of the four thermometers, reading down from the upper end casting, were, 358°, 297°, 268°, and 147° F.

Next, the control valve was adjusted so as to drop the level exactly 3 inches in the inclined glass. Since the slope is 1 in 12, this should drop the level in the boiler one-quarter inch. But it does not, however. When the end casting rises, the slope is increased. This increase causes the level to run farther down the tube. The reverse occurs on a rising level, which flattens the slope and causes the water to run out farther, and so cool more of the tube than would be exposed by a fixed slope. This is a decided advantage of the cantilever design, and is one of the reasons why it was adopted. Since our intermediate thermometers were spaced just 3 inches apart, dropping the level in the tube 3 inches brings the lower end of the thermometer into the same relative position to the water level as the other occupied at the 3-inch higher level.

EFFECT OF CONDUCTIVITY

Now, we take our new readings, and get, respectively, 358°, 324°, 288°, and 160° F. From these two sets of figures we learn that the arithmetical mean average increase in temperature of the 3 inches uncovered by the water and exposed to steam was only 23.5°, and the mean rise for the lower 18 inches, which in both cases was filled with water, is 16.5°, and for the top 21 inches, which in both cases were filled with steam, is 13.5°. The coefficient of expansion of the tube material is .0000105; and multiplying out, we find the actual expansion of the three sections in inches, and in the foregoing order to be .0007402$_5$, .00311850, and .00297675 inch. The total of these is .00683550, or a trifle less than .007 of an inch. Therefore, only a little more than 10 per cent of this expansion occurs in the 3 inches which changed from a water contact to a steam contact. It was a surprise to learn that the tube temperature as much as 3 inches below the water level was so high. This is the effect of conductivity.

Another interesting observation is that on checking the second set of readings we see that the upper of the intermediate thermometers, even though measuring tube temperature 3 inches above the water level and at a point where you would expect the steam to be up to full saturation temperature, records a temperature 34° lower than the steam temperature in the end casting, and this latter is not even up to saturation temperature. This is a result of heat dissipation through conductivity.

Returning to our mathematics, we found total expansion of .0068350 inch. Since this is multiplied by 8, through cantilever action, the end casting moves up eight times this amount, or .05468 inch. Now, raising the end of the tube .05468 inch will raise the tube at the water level 18/42 of this amount, which will cause the water to run down the tube approximately a quarter of an inch. So, had we lowered our level in the boiler glass a full quarter-inch, we should have exposed 3/4 inches of tube to the steam and should have increased our total movement by one-twelfth up to approximately .06 inch, or a little less than one-sixteenth inch. As nearly as we can measure this actual amount, it is one-sixteenth inch for one-quarter inch change in boiler level.

Any slight discrepancy here is easily explained by the fact that the true mean temperatures are not arithmetical means, and our slope increment changes the slope ratio, thus introducing a slight

correction. For all practical purposes the mathematics is close enough.

It will be noted that our lower end temperatures in this series are somewhat higher than those in our 72-hour test. These were purposely taken in the middle of the day when it was hot, with no breeze stirring, so as to determine the movement available for valve operation under the most adverse conditions.

After developing a regulator with such potential movement of the valve mechanism, it was logical that we utilize this movement in operating a high-and-low whistle alarm. . . .

The simple mechanism we have devised permits the setting of the valve trips so close that a variation of a half-inch from normal will sound the whistle. Also, they may be set so as to be independent, permitting more variation on one than on the other. The adjustment is very simple, and is fixed by setting a jam-nut. Equipped with this device, a boiler will whistle for high water long before the level has gone up sufficiently to produce wet steam. It can be adjusted to whistle for low, with only a slight drop below normal, thus affording the attendant an opportunity to correct the difficulty before he loses sight of the level in the bottom gauge.

The advantages of this system are apparent. First, it is fool-proof. Movement of the operating mechanism is inevitable if the water level rises or falls in the tube. By-passing or completely removing the level control valve still leaves the whistle in operation. All parts are outside and so are accessible at all times. A complete range of adjustment is provided.

When the alarm is installed, steam for the whistle must be taken from a source other than the steam lead to the controller. Even the small flow of steam necessary to blow the whistle will reduce the pressure in the upper end of the tube, and the full boiler pressure below will force the water up the thermostatic tube and chill it off. If whistling for high, the whistle will blow continuously and keep the water valve shut off till the boiler is dry. If whistling for low, the whistle will give one short blast, then the water will rush up the tube, chilling it and shutting off the whistle. This performance allows the water to run back and the tube to heat up, blowing the whistle again, and repeatedly at short intervals.

This source of steam for the whistle should be from a point in the boiler shell or water column, slightly below the connection in the whistle head, so as to drain back any condensate to the boiler. Otherwise, a small slug of hot water may shoot out when the whistle valve is first opened.

When a rotary is in operation, it would be hard to hear even a locomotive whistle from the derrick floor. This condition prompted the signaling by means of lights. Two small Mercoid switches are mounted adjustably on the lower whistle arm. The electric leads from these on each of the boilers in the drilling-battery are connected to a three-wire system running to the derrick floor. Here two vapor-proof lights are mounted, a red one for low water, and a blue one for high water. With this system the driller has a complete check on boiler performance. The adjustment on the switches can be made independent of the whistle, either more or less sensitive. With this arrangement, the whistle and the mechanism can be eliminated, since only one arm is necessary for the tilting of the Mercoids. Or electric horns may be used, or any combination of light and horns. The power, a simple 110-volt lighting circuit lead, can be cut in at any point between the derrick and the boilers.

Many companies at times use their boiler man on the derrick floor. Under these drilling conditions, an alarm system of the type just described is a great help.

Provision is made for checking at any time the performance of both the whistle and the electric signaling.

There is one more point to stress with regard to the action of the fins. When the regulator is properly set: As the level drops in the gauge glass, all the water will run out of the tube before the level is down out of sight. This draining fills the entire tube, including the finned section, with steam. The radiation from the fins releases large quantities of latent heat, which heat the tube very hot. This heating causes an extreme

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● All FISHER cages are fitted with a specially developed seamless, welded ball float of either copper or stainless steel. Every float has an ample safety factor for the pressure on which it is to operate. The float is mounted on a long rod, which developes powerful leverage in operating the valve or mechanism to which the unit may be attached.

● The FISHER Style C rotary stem ball bearing stuffing box is an outstanding feature. Until the development of this design, most of the operating power produced by the float was lost in overcoming the friction of the stuffing box, but with the Style C, full operating force is available. The ball bearings are fully lubricated at all times and are outside of the liquid chamber, where they are kept in perfect working order and eliminate both radial and thrust friction. Stuffing boxes can be furnished with air cooled fins for extreme high temperatures.

Every FISHER float cage is subjected to a high pressure kerosene test for operation and leakage before shipment. Many different designs of lever valves are available for all types of direct operation, and, in addition, FISHER manufactures a complete line of remote type, air actuated liquid level controllers. For complete information on FISHER liquid level controls, write for Bulletin 36-B.

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opening of the valve, thus making it impossible to burn a boiler, so long as water is available at the proper differential.

There are many applications for the control other than in boiler-feed regulation. They are being used very successfully, replacing steam traps for discharging condensed steam from evaporator and stabilizer reboilers. The condensate is discharged at a rate equal to that of formation, and no steam blows through. For such service we recommend stainless-steel-trimmed valves, or, if the service is especially severe, we Stellite both valve disc and seat.

It can be used advantageously for liquid-level control in any location where, above the liquid, there is a hot gaseous component capable of heating the upper end of the working tube. It is especially suited for maintaining a level in stabilizers or reboilers, and is much more sensitive and more positive than a float.

Another outstanding application we have made, utilizing the cantilever principle but eliminating the fins, is in controlling the gas fire under a small retort in a continuous oil reconditioning plant. In this installation the entire oil flow from the retort passes through the length of the tube, and the multiplied expansion and contraction effect closely regulates the temperature of the oil entering the small fractionating column.

J. T. Gow Appointed Research Metallurgist for Battelle

Battelle Memorial Institute has announced the appointment of James T. Gow as research metallurgist on the institute staff. Mr. Gow was graduated from the University of Minnesota in 1929 and has a master of science and metallurgical degree. From 1928 to 1930 he was employed by the Naval Research Laboratory as advisor on steel casting production in the Navy Yard Foundries,

JAMES T. GOW

where he was identified with the development of the Gamma ray method of inspection of steel castings.

From 1930 to the time of his coming to Battelle, he was metallurgical engineer with the International Nickel Co., where he was employed in research work on heat and corrosion resistant alloys. At the institute he will continue in metallurgical research, particularly in the fields of heat and corrosion resistant alloys, which are of special interest to the chemical industries.

Within recent months research work at Battelle sponsored by industries has so increased that the construction, now in progress, of another large laboratory building was necessary.

Analyses of Crude Oil Produced Outside of the United States

By GUSTAV EGLOFF
Universal Oil Products Co.

Following are the analyses and properties of representative crude oils produced in Argentina, Syria, Albania, Greece and Turkey. Analyses of crudes produced in other foreign countries appeared in the December 21, 1936, and January 14, 1937 issues of The Oil and Gas Journal; other analyses and properties of representative crudes will appear in subsequent issues.

ARGENTINA

The 16 refineries in Argentina have a daily capacity of 80,000 bbls. of crude oil and a cracking capacity of 33,650 bbls. The oil is a heavy fuel type and comes from depths ranging from 1,700 feet to 3,240 feet. The gasoline content of the crude is about 19 per cent having an octane rating of 30. The analysis of the crude is shown in following tables:

ARGENTINA (SOUTH AMERICA) CRUDE OILS

Fractions removed—	None	325° F. gasoline	400° F. gasoline	Kerosene	Gas oil	Topped crude (after removal of 325° F. gasoline)	Topped crude (after removal of 400° F. gasoline)	Reduced crude (after removal of gasoline and kerosene)	Reduced crude (after removal of kerosene and gas oil)
Hempel Distillation									
Yields, vol. per cent of crude	100.0	9.7	18.9	20.2	4.9	90.2	81.0	70.0	65.1
Properties of Fractions									
Gravity, deg. A.P.I.	28.0	62.5	57.1	46.9	36.2	25.2	22.7	20.1	18.9
Sp. gr. at 60° F.	0.8871	0.7294	0.7503	0.7932	0.8438	0.9030	0.9176	0.9334	0.9408
Sulfur, per cent	0.09	0.02	0.02	0.02	0.05	0.10	0.12	0.14	0.14
Octane number (C.F.R. Motor Method)	.....	42	30	.....	.....	.....	.....	.....	.....
Flashpoint (Cleveland Open Cup), deg. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flashpoint (Pensky-Martens), deg. F.	.....	.....	.....	.....	.....	.....	225	285	356
Viscosity (Universal), sec. at 100° F.	249	.....	.....	32.6	37.8	.....	.....	.....	.....
Viscosity (Universal), sec. at 210° F.	.....	.....	.....	.....	.....	.....	.....	208	338
Viscosity (Furol), sec. at 77° F.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Viscosity (Furol), sec. at 122° F.	.....	.....	.....	.....	.....	33	71	196	339
B.S.&W., per cent	.....	.....	.....	.....	.....	.....	0.1	0.1	0.1
Cold test, deg. F.	.....	.....	.....	.....	Below 0	.....	15	45	50
Characterization factor	.....	12.1	12.1	12.0	11.8	12.0	12.0	12.0	12.0
Engler Distillation									
Initial B.P.	Deg. F. 219	Deg. F 143	Deg. F. 162	Deg. F. 323	Deg. F. 487	Deg. F. 348	Deg. F. 449	Deg. F. 551	Deg. F. 598
Per cent distilled over:									
5	291	185	211	345	496	393	490	587	627
10	334	196	226	362	504	425	515	608	644
20	427	210	246	363	511	504	572	650	669
30	520	220	261	376	514	591	646	673	681
50	682	237	290	403	522	684	693	697	701
70	721	255	320	437	533	709	711	711	729
90	Superhtd.	285	360	479	554	Superhtd.	Superhtd.	Superhtd.	Superhtd.
Endpoint	748	324	401	525	583	739	733	734	729
Total per cent over	92.0	98.5	99.0	99.0	98.0	92.0	91.0	90.0	89.0
Per cent bottoms	.....	1.0	1.0	1.0	2.0	.....	.....	.....	.....
Per cent coke by weight	7.4	.....	.....	.....	.....	8.3	8.8	10.1	11.2
Per cent loss	0.6	0.5	.....	.....	.....	.....	.....	.....	.....
Per cent at 400° F.	17.0	.....	.....	.....	.....	6.0	.....	.....	.....
Per cent at 572° F.	35.0	.....	.....	.....	.....	28.0	20.0	3.0	.....

Properties of Fractions

	Salta-Jujuy	Comodoro Rivadavia field	Plaza Huincul	Mendoza area
Gravity, °A.P.I.	15.9	20.8	33.8	30.8
Pourpoint, °F.	color-black	15	Below 5	55
Water, per cent	4.9	.02	Nil	Nil
Viscosity (S.U.) at 70° F.	350.6	Above 6,000	75	133
	(visc. at 50° C. Engler)			
Viscosity (S.U.) at 100 °F.	10,719	2,490	55	71
Sulfur, per cent	.527	0 17	0.29	0.19
Carbon residuum, per cent	....	10.5	9.9	8.6

Hempel Distillation

Temperature, °F.—	Comodoro Rivadavia field Gravity, °A.P.I.	Plaza Huincul Gravity, °A.P.I.	Mendoza area Gravity, °A.P.I.
Up to 122	....	....	....
122 to 167	....	....	....
167 to 212		70.6	
212 to 257	61.8	59.7	59.2
257 to 302		55.4	55.7
302 to 347		51.6	52.5
347 to 392	52.7	48.1	48.8
392 to 437	45.8	45.4	46.0
437 to 482	39.2	42.3	43.0
482 to 527	34.8	39.6	39.2

Vacuum Distillation at 40 mm.

Temperature, °F.—	Comodoro Rivadavia field Gr., °A.P.I.	Comodoro Rivadavia field Cloud test	Plaza Huincul Gr., °A.P.I.	Plaza Huincul Cloud test	Mendoza area Gr., °A.P.I.	Mendoza area Cloud test
Up to 392	29.7	Below 5	37.8	28	35.6	14
392 to 437	27.1	12	33.8	52	32.8	34
437 to 482	25.6	36	30.2	52	31.3	52
482 to 527	23.8	48	28.2	68	28.4	72
527 to 572	22.3	52	26.4	82	26.3	88

	Comodoro Rivadavia field Gr., °A.P.I.	Comodoro Rivadavia field Per cent	Plaza Huincul Gr., °A.P.I.	Plaza Huincul Per cent	Mendoza area Gr., °A.P.I.	Mendoza area Per cent
Light gasoline to 212° F.	....	....	70.6	5.2	....	....
Naphtha and gasoline	55.7	4.9	56.7	25.1	53.2	17.5
Kerosene distillate	45.8	1.7	43.6	10.1	44.5	11.9
Gas oil	34.6	10.9	37.4	16.6	36.8	15.8
Medium lubricating distillate	25.4–23.7	4.7	28.0–25.6	6.3	28.9–26.6	7.1
Viscous lubricating distillate	23.7–21.5	7.9	....	....	26.6–25.2	4.6
Nonviscous lubricating distillate	29.9–25.4	6.6	33.2–28.0	10.3	33.6–28.9	11.6
Residuum	15.4	63.2	....	....	16.0	32.2
Distillation loss	....	0.1	....	....	....	....

Syria, Albania, Greece and Turkey Crudes

The following analyses are given for the four countries, Syria, Albania, Greece and Turkey:

SYRIAN (BITUMINOUS LIMESTONE) CRUDE OILS

On the addition of water the sample separated into two layers of light and heavy oil.

Engler Distillation (Light Oil)

Temperature, °F.—	Per cent	d_{15}	Engler viscosity at 95° F.	Flash-point, °F.	Burning point, °F.
Crude oil	....	0.997	0.68	134.6	192.2
Below 302°	2.8	0.919	....	.....	.....
302-572	54.0	0.956	0.27	140.0	177.8
572-644	30.0	0.990	1.15	224.6	365.0

Residue and losses, per cent	13.2
Melting point of pitch (Kraemer-Sarnow), deg. F.	150.8
Asphalt, per cent	3.88
Sulfur, per cent	1.23
Paraffin (Butanone Method), per cent	1.20

Engler Distillation (Heavy Oil)

Temperature, °F.—	Per cent	d_{15}	Engler viscosity at 95° F.	Flash-point, °F.	Burning point, °F.
Crude oil	....	1.049	0.7	152.6	204.8
Below 302°	2.5	0.916	....	.....	.....
302-572	58.0	0.980	0.33	143.6	190.4
572-653	25.5	1.056	1.7	191.3	363.2

Residue and losses, per cent	14.0
Melting point of pitch (Kraemer-Sarnow), deg. F.	156.2
Asphalt, per cent	2.79
Sulfur, per cent	1.28
Paraffin, per cent	1.40

Note: All fractions had a slight green fluorescence in both cases.

ALBANIAN CRUDE OILS

	Samples No. 1	No. 2	No. 3
D_{15}	0.918	0.936	0.970
Flashpoint, deg. F.	N. temp.	N. temp.	89.6
Burning point, deg. F.	64.4	78.8	111.2
Heat content, cal./g.	10,286	10,246	9,987
Optical rotation	+1.5636	+1.2643	+0.6146

Engler Distillation

	Deg. F.	Deg. F.	Deg. F.
Initial B.P.	136.4	116.6	138.2
Per cent distilled over:			
212	5.9	6.8	2.1
257	9.9	10.2	4.1
302	18.8	15.0	7.1
347	19.8	19.1	10.8
392	22.0	25.7	14.2
437	27.3	27.2	16.0
482	30.7	29.9	19.4
527	33.0	33.5	22.4
572	38.2	36.6	26.7
Asphalt, per cent	20.69	10.55	11.22
Hard asphalt	0.66	1.74	3.68
Soft asphalt	20.03	8.81	7.54
Paraffin, per cent	0.26	0.31	0.32
Sulfur, per cent	2.21	3.57	4.13

GREECE (ISLE OF ZANTHE) CRUDE OILS

Fractions removed	None

Hempel Distillation

Yields, vol. per cent of crude	100.0

Properties of Fractions

Gravity, deg. A.P.I.	9.3
Sp. gr. at 60 deg. F.	1.0049
Sulfur, per cent	5.48
Flashpoint (Cleveland Open Cup), deg. F.	*265
Firepoint (Cleveland Open Cup), deg. F.	*295
Flashpoint (Pensky-Martens), deg. F.	*185
Viscosity (Universal), sec. at 100° F.	.....
Viscosity (Universal), sec. at 122° F.	.....
Viscosity (Furol), sec. at 77° F.	.....
Viscosity (Furol), sec. at 122° F.	189
B.S.&W., per cent	4.4
Cold test, deg. F.	+25

*On a dehydrated sample.

Engler Distillation

	Deg. F.
Initial B.P.	414
Per cent distilled over:	
5	509
10	563
20	637
30	673
50	717
70	734
90	.....
Endpoint	736
Total per cent over	86.5
Per cent bottoms	.....
Per cent coke by weight	13.7
Per cent loss	.....
Per cent water	†4.3
Per cent at 400° F.	.....
Per cent at 410° F.	.....
Per cent at 437° F.	1.0
Per cent at 572° F.	11.0

†A.S.T.M.

Remarks: No Hempel breakup of this crude was given.

TURKEY (PULK RIVER VALLEY) CRUDE OILS

Sp. gr.	0.8412
Color	Bright yellow with blue shimmer

Engler Distillation

Temperature, deg. F.—	Per cent	Specific gravity	Flashpoint, °F.
142-302	3.5	0.700	149
302-572	58.8	0.8240	...
Residuum	37.5	0.8810	...

Oil From First Boring

Sp. gr. at 59° F.	0.820
Flashpoint, deg. F. (Engler)	113
Paraffins, per cent	1 to 2

Venezuela Crude Oils

Venezuela has 18 oil producing fields and is the third largest producing country in the world, the United States and Russia only, producing more. The A.P.I. gravity ranges from around 16° to 35°, and the gasoline content is from 9 to 47 per cent. The depths at which the oil is produced vary from 615 feet to 3,400 feet, and the crudes are asphaltic or paraffin base. There are six refineries in Venezuela with a combined daily crude capacity of 25,000 bbls. with no cracking installations. The bulk of Venezuelan crude oil is refined at two large refineries owned by subsidiaries of the Royal Dutch-Shell located on Aruba and Curacao islands of the Dutch West Indies and the Lago refinery (Standard of New Jersey) located on Aruba Island.

VENEZUELAN CRUDE OIL ANALYSES

	Mene Grande		Ambrosio	La Rosa	La Concepcion	El Mene
°A.P.I.	16.0	17.9	21.3	25.2	33.4	35.2
Per cent sulfur	2.65	2.51	2.02	1.69	0.88	0.38
Vis. at 100° F.	1,307	790	307	133	52	34
Pour test, °F.	(a)	(a)	(a)	(a)	(a)	(a)
Gasoline fraction:						
Per cent	9.2	14.6	13.2	18.9	21.0	47.4
°A.P.I.	48.3	53.2	55.4	57.4	54.2	55.7
Per cent carbon residue of residuum	19.1	22.4	17.8	14.9	9.0	15.2
Fraction distilling at atmos. pres. between 482-527° F.:						
Sp. gr.	879	880	865	851	838	894
°A.P.I.	29.5	29.3	32.1	34.8	37.4	26.8
Fraction distilling at 40 mm. vacuum between 527-572° F.:	Below 5	Below 5	90	80	90	80
Pour points						
Base of crudes	Naphthene	Naphthene	Hybrid	Inter-mediate	Inter-mediate	Hybrid

Field—	Depth	Base:	Gravity
1. Ambrosio	1,500-2,400	Asphaltic	24° Be.
2. Concepcion	900-1,700	Mixed	37-38° Be.
3. El Mene	650-1,000	Paraffin or mixed	32 5° Be.
4. Guanaco	615	Black asphaltic	10-12° Be.
5. Lagunillas	...	Asphaltic	17.5° Be.
6. La Paz	752	Asphaltic	25° Be.
7. La Rosa	...	Asphaltic	20-24° Be.
8. Mene Grande	...	Asphaltic	15-19° Be.
9. Poini	...	Asphaltic	...
10. Punta Benitez	2,500-2,800		26-28° Be.
11. Quiriquire	...	Heavy asphaltic	12° Be.
12. Rio Tarra		Asphaltic	23-32° Be.
13. Sibucara	Upper Oligocene	Gas producer	
14. Urumaco	3,400	Paraffin base	31-33° Be.
15. El Posone	Upper Oligocene or Lower Miocene		
16. Hombre Pintado	Upper Oligocene	Paraffin or mixed	32.5° Be.
17. Totumo	1,227	.....	32.5° Be.
18. Limon	2,720	Gas only	

VENEZUELAN CRUDE OILS

	Crude	350° F. Gasoline	400° F. Gasoline	425° F. Gasoline	Topped crude	400° F. Gasoline	Gasoline + kerosene	Topped crude	Reduced crude	Crude	Crude
Yields, vol. per cent of crude	100.0	43.2	52.1	54.3	56.2–47.0 45.0	50.9	77.0	48.9	23.0	100.0	100.0
Gravity, °A.P.I.	47.5	63.4	61.4	60.6	....	62.7	54.6	35.4	29.1	16.9	23.3
Sp. grav. at 60° F.	....	....	....	....	.....	....	....	....	....	0.9535	0.9141
Color, °Saybolt	....	....	....	....	.....	25	....	....	....	....	....
Doctor test	....	....	....	....	.....	Neg.	....	....	....	....	....
Sulfur, per cent	0.11	....	....	....	.....	0.02	....	0.15	0.17	2.37	1.79
Octane Number, M.M.	....	56	53	52	.....	54	....	....	....	....	....
Flash, C.O.C., °F.	Room temp.	....	....	....	.....	....	....	170	245	....	....
Fire, C.O.C., °F.	....	....	....	....	.....	....	....	205	300	....	....
Flash, Pensky-Martens, °F.	....	....	....	....	.....	....	....	145	185	....	....
Vis. Furol at 77° F., sec.	11	....	....	....	.....	....	....	11	....	....	....
Vis. Furol at 122° F., sec.	....	....	....	....	.....	....	....	....	12	....	....
B.s.&w., per cent	0.2	....	....	....	.....	....	....	0.2	0.2	0.4	0.1
Cold test, °F.	30	....	....	....	.....	....	....	65	75	Below 0	Below 0
100 cc. A.S.T.M. Distillation											
I.B.P., °F.	122	100	120	128	....	104	115	378	446	215	191
5 per cent	164	128	146	142	....	134	156	420	546	330	274
10 per cent	198	145	158	158	....	150	178	446	569	445	330
20 per cent	242	170	180	180	....	180	210	475	600	572	466
30 per cent	288	...	...	...	....	...	...	498	618	646	572
50 per cent	406	222	242	246	....	246	319	550	661	692	694
70 per cent	538	...	...	...	.....	...	...	630	710	709	710
90 per cent	698	298	344	357	....	356	506	748	...	Cracking	...
E.P., °F.	760	348	400	425	....	394	544	...	...	713	725
Per cent over	97.5	98.0	98.0	98.5	....	96.0	96.5	99.0	98.5	89.5	93.0
Per cent bottoms	...	1.5	1.5	1.0	....	1.0	1.5	....	....	....	....
Per cent bottoms and coke	1.4	...	...	...	.....	...	...	...	...	...	...
Per cent coke by weight	...	...	...	...	.....	...	...	1.3	1.8	10.7	8.0
Per cent loss	1.1	0.5	0.5	0.5	.....	3.0	2.0	...	...	....	...
Per cent water	...	...	...	...	.....	...	...	Trace	...	....	...
Per cent at 400° F.	49.0	...	...	...	.....	...	...	3.0	...	7.5	15.0
Per cent at 437° F.	50.5	...	...	...	.....	...	...	8.0	...	8.0	18.0
Per cent at 572° F.	73.0	...	...	...	.....	...	...	57.0	11.5	19.5	30.0

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Shallow Wells in West Kansas Need Reconditioning

I have taken over some leases in western Kansas with old shallow wells on them, still producing a barrel or two apiece a day. It is planned to give them a hot water and lye cleaning. We also intend to drill some holes in an old bit and anchor short pieces of steel cable therein and give the sides of hole a thorough scraping, rebuild and recondition sucker-rods, working barrels and other equipment. Do you think this will step up production enough to make this plan pay out?—M. D. D.

You do not tell us enough about your leases to permit of a very clear answer. You mention western Kansas, but we do not know of any shallow production there.

If you have lime production it can be acidized. If sand it can be treated with some sort of paraffin solvent. Either one of these jobs can be done by commercial companies who will be glad to give you estimates of cost and probabilities of success.

You do not say whether the hole has been shot. If it has been it is probable you would not have much success trying to brush the side walls with the improvised brush made of steel cable. In the first place, the wires making up the cable will be bent in one direction and will not spring back. If the wires will not spring back it is useless to try to brush the walls of the hole with them.

Compressor Gave Trouble When Working Pressure Increased

We have had trouble with excessive heating of high-pressure cylinder or a two-stage compressor used in a repressuring system when change was made in the working pressure of the air discharged into the wells from the old pressure of 200 pounds per square inch to 275 pounds per square inch. No other changes were made in the system as all intake and discharge valves were left as originally set for the lower pressure conditions. Can you suggest what the trouble may be as the compressor will work at pressures up to 400 pounds pressure if not placed in the repressuring system, but as soon as it is hooked into that system the high-pressure cylinder heats excessively?—D. W. F.

This trouble seems to be very much like a case observed in the Cushing field where it was decided to increase the pressure of the air used for repressuring a series of wells and after a number of experiments it was found that the trouble had been caused because of high ratio of compression.

The ratio of compression is represented by the relation of final to initial absolute pressure and should be from a ratio of 2 to 1 to 6 to 1.

In the case investigated it was found by not opening the intake on the low side of the machine the initial compression of air did not amount to enough to reduce the work on the high-pressure side, and therefore the air was compressed from about atmospheric pressure to 275 pounds per square inch in one operation in the high-pressure cylinder.

The heat generated in compressing air from atmospheric to 275 pounds per square inch equals 774° F. and it follows that if all the work is done in one cylinder without intercooling this heat will cause trouble.

The trouble was remedied when the ratio of compression was reduced by opening the intake side of the low-compression cylinder to permit more air to be taken in each stroke, thus dividing the work of compressing between the two cylinders with the intercooler doing its duty and the machine has worked satisfactorily ever since.

History of Gas-Lift

When was the gas-lift invented? Has the method been patented?—M. A. S.

The first mention of the application of compressed air to the lifting of water is that found in the book of Heron. The "Fountain of Heron" was employed about the middle of the eighteenth century in the mines of Chemnitz, in Hungary. In 1797 some laboratory experiments were made by C. E. Loescher, a German mining engineer.

The first application of the air-lift in America is said to have been made in some oil wells in Pennsylvania by Cockford about the year 1864. An early mention of the use of the air-lift in connection with the lifting of oil from wells is found in a book published in 1866, in which claims for an air-lift invention were made that would lift oil from the wells, thus doing away with the pump.

In 1865, A. Brear patented the "oil ejector" (47,793), some of the features of which are as applicable today as they were when application was made for the patent. The two-pipe system was patented by J. P. Frizell in 1880 (233,499). A patent, similar in principle to the Frizell patent, was granted to Dr. Julius G. Pohle in 1882 (487,639). The Saunders, or "central" system, was patented in 1898 (597,023). In the Saunders patent, the air is introduced through the annular space, and the liquid is lifted through a pipe, or tubing, suspended within the outer pipe.

A patent was granted to P. Jones (1,102,152) in 1914, covering the method of recycling gas from an oil well, the gas being recompressed and pumped back into the well for lifting the oil. This patent is believed to have been later declared invalid. The Jones patent is believed to be the first attempt to recycle gas for lifting oil.

One of the earliest successful attempts to lift oil by air-lift was in Baku, Russia, in 1899-1900. This work was done by A. Beeby Thompson, and later described in detail by Robert Stirling, the engineer who had immediate charge of the work.

The air-lift was employed at an early date in oil wells in the Evangeline field, Louisiana, and since 1901 it has been employed extensively at Humble, and various other fields on the Gulf Coast, including Hull, Orange, Sour Lake, Spindletop and Vinton. It is now being employed in the Saxet Heights field, and has been in use in the Refugio field, Texas, for some years.

Intermittent flowing of oil wells was employed in 1899 by M. T. Chapman in the Corsicana field, Texas. The intermitting system was employed by Watts in 1916, and an intermitting device was patented (1,202,932) by him in that year. This work has been followed by the use of various modifications for handling intermittent-flow operations.

The most widely known use of the gas-lift was that carried on in the Seminole field, beginning with the latter part of 1926. At the same time, air- and gas-lift operations were being handled to some extent in California, Spindletop, West Texas and various other places.

The air-lift is being employed for lifting water in municipal plants all over the world. It is also being employed for lifting molten sulfur on the Gulf Coast by the Frash process, also for lifting tailings in ore-treatment mills, and for various other purposes.

How Can Bituminous Accumulations Be Removed From Face of Well

We have set the perforated pipe on the tubing within a few feet of the bottom of the sand and sometimes below the sand in the pocket drilled in the shale. The oil tests about 25 to 27 gravity. Do you think exposing this sand bed each day as the well pumps off that there would be a tendency for the sand to coat over with paraffin or asphalt? It has been noted when the rods were pulled there was a heavy accumulation of a "salve-like" paste and whether this is paraffin or asphalt is not known. If our practice should be in error in what manner could we clean off the sand walls? Some operators have advised the use of carbide and water to generate heat in the hole to melt the accumulation off the walls of the hole. Others advise pouring distillate into the well but is there not some proven remedy? The wells produce no water.—J. P. C.

The best manner for you to secure answer to your problem is to have sample of the "salve-like" paste analyzed by a good laboratory and determine its constituents. It is very probable the heavy fractions of your oil precipitated as the lighter part of the oil ran down the side of the hole and was pumped out.

As the oil escapes from the pores in the sandstone it forms a thin sheet of fluid over the face of the bore hole. The portion of this oil that remains fluid runs down into the hole. The material which accumulates on the face of the sand will drop off from time to time and float on the surface of this oil and it is probable the material noted on the rods is a mixture of the precipitated oil and the lighter oil.

Heat will tend to melt the accumulation on the face of the sand. Calcium carbide and water do not generate sufficient heat to be very effective in melting this sediment from the face of the sand. A light shot of nitroglycerin is more effective. Any sudden jar will break a portion of this waxy accumulation from the sand face. It will come off in patches and not in a uniform manner but additional drainage surface will be exposed and that is the thing desired.

There are paraffin solvents now on the market which will dissolve this material from the face of the hole or from the wall of the tubing. Distillate will do this to some extent but it is not always as good a solvent as may be secured. One way to test its solvent properties is to put some of the material scraped from the rods into a jar full of distillate and note the effect. Hot kerosene has been used but it is difficult to get this heated fluid to the bottom of the hole without too much loss of heat in transit. It usually requires in excess of 125° F. to melt paraffin wax.

It is suggested you have the well shot with a light charge of nitroglycerin or have it treated with a paraffin solvent. It will require repeated treatments but it should result in additional recovery of oil. It is recommended a careful cost accounting be kept of whatever method is used to treat the well to note whether the extra oil recovered justifies the added cost. It is possible that as much oil as flows to the face of the sand is finding exit into the well because a heavy oil of this kind will flow slowly through the pores in the sand and without any reservoir energy to assist this flow it is possible you are getting about all the oil the well is capable of making even though some of the pores may be covered with precipitates.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Products From Rumanian Oil With Export Specifications

It will be much appreciated if you will kindly give me tests on the products produced from Rumanian crude oils. Could you give me the results stated in a way that could be compared with the similar products from American oils?—T. W. S.

We do not have recent data but the standard specifications used for the inspection of exports of Rumanian petroleum products to France in 1934, are probably representative at this time. The properties of the several products are indicated in the table.

PRODUCTS FROM RUMANIAN OIL

	Gasoline		
	Light	Medium	Heavy
Gr. A.P.I.	65/62.4	59.5/58.4	53.5/52.3
Distillation:			
Off at 212° F. min. per cent	60	35	0.5
Max. E.P., °F.	311	356	365

	Kerosene	White Spirit	
		1st Grade	2nd Grade
Gr. A.P.I.	40/41	44.33 max.	44.3 max.
Distillation	at 536°F.	at 392° F.	410° F.
Min. per cent	93	98	98
Color Saybolt	21	21	21
Flash closed, min. °F.	80	80	80

	Gas Oil		
Grade	50	0° to —10°	—15°
Gr. A.P.I.	38	38	33
Distillation:			
Off at 572° F. %	58	60	70
Flash, P. M.	Minimum 149° F. for all		
Pour, °F.	37	32	5

	Fuel Oil			
Grade 30/35	10	0	—10	—15
Gr. A.P.I. 17.5°27.7	12.9/25.7	12.9/25.7	12.9/25.7	

Meaning of Volatility Index As Relating to Gasoline

What is the meaning of Volatility Index when used as a specification item for gasoline? I have been told it may be covered by distillation percentages or vapor pressure. Your ideas on this will be appreciated.—S. T.

There are several properties that may serve as indicating in a broad way the volatility of petroleum liquids. The more volatile products have high-vapor pressures, low-flashing temperatures and distill at relatively low temperatures. The lower percentage-off-temperatures, such as the 10 and 20 per cent points as found by the distillation test, are commonly used as an indication of the easy-starting property of motor fuels. The flashing temperatures of gasolines are too low to be of much value for this purpose. The vapor pressures have a more reliable use as a limiting factor for the control of vapor lock, but both low flash and high-vapor pressure indicate that the substance is readily volatile.

A specific Volatility Index for motor fuels was proposed by Oberfell and Alden in 1933 for comparing the warming-up or starting-up characteristics. The effective volatility being interpreted from the temperature at which 50 per cent has evaporated. The 35 per cent point was considered critical for starting and the 60 per cent temperature for driving conditions. The influence of these three points were combined in the Volatility Index, obtained by subtracting from 284 the temperature in degrees F., observed when 50 per cent had been evaporated by the A.S.T.M. distillation test.

The specification for U. S. Government Gasoline stipulates the maximum temperature of 284° F. permitted for a 50 per cent recovery; therefore, this grade of gasoline would have a Volatility Index of zero. Motor Fuel V requires a maximum of 257° F. for the 50 per cent point, so the Volatility Index is 27. The volatility increasing for aircraft fuel so that Lighting Grade Aviation Gasoline should have an index of 72.

Reference: Oberfell and Alden, The Oil and Gas Journal, January 19, 1933, page 14.

Sulfur Contained in Motor Gasoline Winter Season 1935-36

How does the sulfur content vary in the gasoline marketed in the United States and what is the highest percentage?—S. H.

The well known specification for total sulfur in motor gasoline is 0.1 per cent and this operates to assist in the control of quality. The U. S. Bureau of Mines cooperated with 17 oil companies on the examination of gasoline sold in their marketing areas, which included Pacific Coast cities, Chicago, Cleveland, St. Louis, Tulsa, Denver and other Middle West cities.

Lowest sulfur gasolines were found in the Middle West and highest in the cities of the West Coast. Regular grade gasolines varied from 0.014 to 0.30 per cent sulfur with 90 per cent of them containing between 0.02 and 0.15 per cent. The premium gasolines showed 0.006 to 0.179 per cent and the third grade 0.016 to 0.23 per cent. Only two samples failed to pass the copper strip test. There was but a slight difference in the sulfur content of the third grade and regular grade gasolines.

Reference: E. C. Lane and A. J. Kraemer, Cooperating Fuel Research Motor-Gasoline Survey, Winter 1935-36, R. I. 3,311. U. S. Bureau of Mines.

SPECIFICATIONS

PETROLEUM ETHER

This product, composed solely of low boiling hydrocarbon distillates, shall be of two grades designated A and B.

	Grade A	Grade B
Color, Saybolt, min.	25	25
Moisture and sediment	none	none
Distillation:		
	between	between
Complete, °F	86 & 176	86 & 149
Recovery min., per cent	90	85
Limit of residue, max. gm. from 50 cc.	0.0005	0.0005
Spot test	negative	negative
Acidity	negative	negative
Benzene hydrocarbons	none	none

Spot test—No greasy stain on filter paper when 10 cc. evaporated at room temperature after 30 minutes and odor of residue shall not be disagreeable.

Reference: Federal Standard Stock Catalog, O-E-751.

Shale Oils Refined in Several Countries Show High Octane Fuel

Are shales being worked for oils at this time? What is the composition of shale oil? Is it a fact that gasoline from shale oil has an exceptionally high octane value?—S. E. P.

There are extensive deposits of bituminous shale in the United States but none is being developed at this time for oil. Other deposits are found in Brazil, Canada, Argentine, Chili, Belgian Congo, the Union of South Africa, China, Japan, Arabia, Syria, Australia, Germany, England, Bulgaria, Spain, Esthonia, Italy, France, Russia, Sweden, and Yugoslavia. Scotland in 1932 treated 1,400,000 tons, and Esthonia 750,000 tons. Japan has a capacity of 1,200,000 tons.

The characteristics of several types of shale oils follow:

	France	Spain	Manchukuo
Specific gravity	0.9018	0.9237	0.896
Gravity, A.P.I.	25.4	21.7	26.6
Pourpoint, degrees	15	29	35
Sulfur, per cent	0.60	0.50	0.60
Acid components	7	....	8.5
Basic components	0.5	....	10
Oil	97	96	98
Coke	3.6	3.8	2.4

The oil extracted from French shale, after topping, shows:

Kerosene, per cent	35—40
Heavy oil, per cent	4
Anthracene oil, per cent	25
Pitch, per cent	29

Cracking shale oils by the Dubbs process, running to coke, has given a 69 per cent yield of crude gasoline. After refining with sulfuric acid it had an octane number of 66-67. The gases contained 21 per cent of olefins, and the refining loss was 12 per cent at the most.

A plant for separating and refining the oil from the Athabaska bitumen sands, recently put into operation near McMurray, Alberta, Canada, was described by L. G. E. Bignell in The Oil and Gas Journal, December 17, 1936, page 37.

Reference: Library Bulletin of Abstracts XI, 167, 1936, from Methods of Treating Bituminous Schists and Their Derivatives. C. Berthelot. Genie civil 1936, 224, Mar. 7; 244, Mar. 14. Annales de l'Office National des Combustibles Liquides 11, 769, 1936, July-Aug. Abs.

Volume of Gas From Oils During Topping Operation

What is the normal amount of gas driven off from a 36/38 gravity crude oil during the topping operation?—M. C. O.

There is no normal or average quantity of gas contained in or that may be evolved from a crude oil. All crude oils differ in this respect as they do in other properties and petroleum products obtainable. Examples from three different oils are shown in the table.

GAS EVOLVED FROM CRUDE OIL

Per cent off	Cushing, Okla., Gr. 38.5 A.P.I. Temp. °F.	Cushing, Okla., Gr. 38.5 A.P.I. Gas cu.ft. per bbl.	Ranger, Tex., Gr. 37.7 A.P.I. Temp. °F.	Ranger, Tex., Gr. 37.7 A.P.I. Gas cu.ft. per bbl.	Glenn Pool, Okla., Gr. 37.7 A.P.I. Gas cu.ft. per bbl.
10	210	9.32	215	11.91	6.23
20	285	3.18	300	.....	....
30	...	....	360	.....	....
40	425	....	415	0.18	0.23
50	500	....	475	.....	0.60
60	575	....	535	0.54	7.88
70	675	....	...	1.49	....
80	735	3.56	600	5.35	12.01
To coke	...	33.75	...	35.52	48.21
Total gas produced		49.81	...	54.99	75.21

The samples for these tests were fresh oil as delivered to the pipe lines.

Bureau of Mines Comparative Figures for Eleven Months

The Bureau of Mines report for November shows the daily average production in that month was 3,033,900 bbls., a decline of 56,300 bbls. from the record average of the previous month.

Most of the decline in output in November was recorded in Texas, the daily average in that state decreasing about 45,000 bbls. to the same level as in September. California and Oklahoma again exchanged places as the second and third ranking states, the former showing a small increase, the latter a small decline. Production in Kansas remained unchanged from October at 166,400 bbls. daily. Daily average production in Louisiana declined from 233,000 bbls. in October to 229,000 bbls. in November; this was the first decline in several months. New Mexico continued to establish new production records, although the material increase in stocks of New Mexico crude in November indicates a slackening of demand. Production in Wyoming rose to the highest level in six years as the steady decline at Salt Creek was outweighed by gains in Lance Creek and other fields.

A general effort to reduce the drilling of unnecessary wells was actively projected in November, hence the drilling record for that month is of more than usual interest. It shows that whereas the total initial of the oil wells declined materially from October, the number of completions and the

(Continued on Page 78)

Crude Oil and Refinery Situation Summarized—First Eleven Months

Supply and Demand—Crude Oil (Bbls.)

First 11 months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Nov. 30
1936	1,030,577,000	1,056,210,000	25,633,000	2.5	1,000,864,000	29,713,000	1,009,692,000	46,518,000	288,998,000
Daily average	3,076,000	3,153,000	77,000	.....	2,987,000	89,000	3,014,000	139,000	.....
1935	934,134,000	955,830,000	21,696,000	2.3	905,231,000	28,903,000	908,550,000	47,280,000	315,558,000
Daily average	2,797,000	2,862,000	65,000	.....	2,710,000	87,000	2,720,000	142,000	.....
Increase, 1936	96,443,000	100,380,000	.....	.....	95,633,000	810,000	101,142,000	†762,000	†26,560,000
Increase, 1936	10.3%	10.5%	.....	.....	10.6%	2.8%	11.1%	†1.6%	†8.4%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

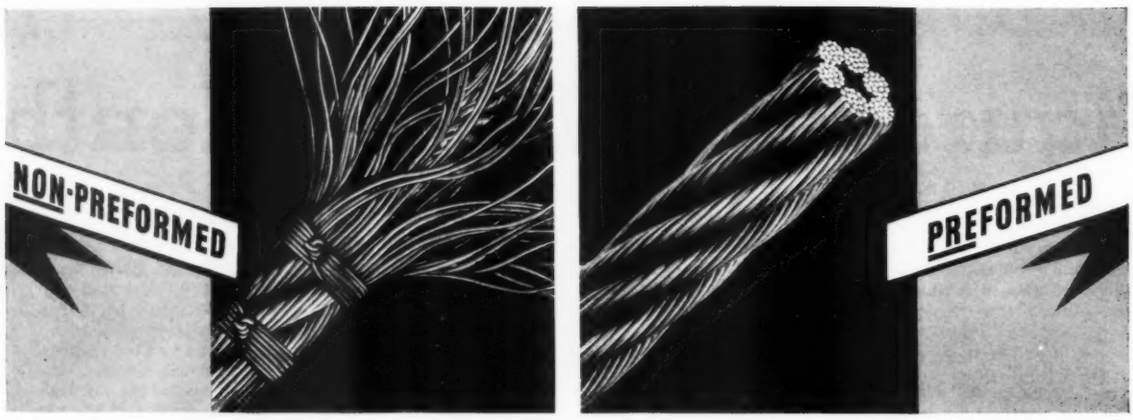
First 11 months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Nov. 30§
1936	470,241,000	467,924,000	*2,317,000	*0.5	470,241,000	.....	442,198,000	25,726,000	62,952,000
Daily average	1,404,000	1,397,000	*7,000	.....	1,404,000	.....	1,320,000	77,000	.....
1935	424,424,000	425,959,000	1,535,000	0.4	424,404,000	20,000	398,822,000	27,137,000	55,963,000
Daily average	1,271,000	1,275,000	4,000	.....	1,271,000	.....	1,194,000	81,000	.....
Increase, 1936	45,817,000	41,965,000	.....	.....	45,837,000	†20,000	43,376,000	†1,411,000	6,989,000
Increase, 1936	10.8%	9.9%	.....	.....	10.8%	†100.0%	10.9%	†5.2%	12.5%
Kerosene									
1936	50,583,000	51,532,000	949,000	1.9	50,582,000	1,000	45,331,000	6,201,000	6,966,000
1935	51,189,000	48,708,000	*2,481,000	*5.1	51,189,000	.....	42,571,000	6,137,000	8,879,000
Increase, 1936	†606,000	2,824,000	.....	.....	†607,000	1,000	2,760,000	64,000	†1,913,000
Increase, 1936	†1.2%	5.8%	.....	.....	†1.2%	.....	6.5%	1.0%	†21.5%
Gas Oil and Fuel Oil									
1936	405,379,000	397,858,000	*7,521,000	*1.9	388,257,000	17,122,000	366,499,000	31,359,000	111,505,000
1935	347,571,000	352,912,000	5,341,000	1.5	332,488,000	15,083,000	326,614,000	26,298,000	108,847,000
Increase, 1936	57,808,000	44,946,000	.....	.....	55,769,000	2,039,000	39,885,000	5,061,000	2,658,000
Increase, 1936	16.6%	12.7%	.....	.....	16.8%	13.5%	12.2%	19.2%	2.4%
Lubricating Oils									
1936	28,141,000	28,538,000	397,000	1.4	28,138,000	3,000	20,855,000	7,683,000	6,628,000
1935	25,287,000	25,761,000	474,000	1.9	25,287,000	.....	18,165,000	7,596,000	6,857,000
Increase, 1936	2,854,000	2,777,000	.....	.....	2,851,000	3,000	2,690,000	87,000	†229,000
Increase, 1936	11.3%	10.8%	.....	.....	11.3%	.....	14.8%	1.1%	†3.3%
Petroleum Wax (Lbs.)									
1936	447,701,000	443,069,000	*4,632,000	*1.0	431,760,000	15,941,000	273,052,000	170,017,000	119,307,000
1935	428,555,000	444,293,000	15,738,000	3.7	409,920,000	18,635,000	239,498,000	204,795,000	120,398,000
Increase, 1936	19,146,000	†1,224,000	.....	.....	21,840,000	†2,694,000	33,554,000	†34,778,000	†1,091,000
Increase, 1936	4.5%	†0.3%	.....	....	5.3%	†14.5%	14.0%	†17.0%	†0.9%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished, unfinished refinery gasoline and natural gasolines. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

Crude Oil Run to Stills and Total All Oils (Bbls.)

First 11 months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Nat. gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Nov. 30
1936	52,098,000	119,844,000	975,083,000	47.2%	38,076,000	1,093,329,000	1,112,756,000	522,273,000
Daily average	156,000	358,000	2,911,000	.....	114,000	3,264,000	3,322,000	.....
1935	47,622,000	116,542,000	881,251,000	47.3%	35,204,000	989,742,000	1,008,704,000	545,186,000
Daily average	143,000	349,000	2,638,000	.....	105,000	2,963,000	3,020,000	.....
Increase, 1936	4,476,000	3,302,000	93,832,000	.....	2,872,000	103,587,000	104,052,000	†22,913,000
Increase, 1936	9.4%	2.8%	10.6%	.....	8.2%	10.5%	10.3%	†4.2%

*Total all oils includes crude and refined products, natural gasoline and benzol. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.



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WICKWIRE SPENCER STEEL COMPANY
WILLIAMSPORT WIRE ROPE COMPANY
WIRE ROPE CORPORATION OF AMERICA
WIRE ROPE MANUFACTURING & EQUIPMENT CO.

FIELD OPERATIONS

Summarizing the Week's Developments

A Bartlesville sand oil pool was opened in the old, shallow Tisdale gas field, Cowley County, Kansas. A 4,000-bbl. well was completed in the Warkentine pool, Harvey County. Another flowing producer was completed at Wellington, Sumner County; and good wells were completed in the Peter pool, Barton County; Trapp pool, Russell County, and Bemis pool, Ellis County.

OKLAHOMA

A Wilcox sand pool was opened in western Lincoln County, north of Wellston, Okla. A Coal County wildcat was being completed as a small pumper, after plugging back from deep, non-productive sands to shallow pay. A well on the north rim of the Cement pool, Caddo County, was showing as a big, wet gasser. A wildcat in Stephens County was dry and abandoned at 7,002 feet.

TEXAS

The biggest well of the week in Texas was completed in the Yates pool in Pecos County. It flowed 1,579 bbls. of oil in one hour, or at the rate of 37,896 bbls. per day. More new locations were made in West Texas in the past week than at any time in the history of the field and the Permian Basin is destined to be one of the most active areas in the country this year. Loving County may have a second Delaware sand pool producing very high gravity oil. The gap between the Goldsmith and Cummins areas is closing and what promises to be a field 10 miles in length appears to be in the making. Operations are definitely declining in the East Texas fields where wells are now averaging one well to 5.5 acres. Thirty-three wells were completed there last week against 20 new locations. A number of important wildcats in the eastern Texas area were abandoned and the enthusiasm for that part of the state is cooling. In central Jefferson County, Texas Gulf Coast, a test shows possibilities of opening a pool. The second 10,000-foot producer in the LaFitte pool in Jefferson Parish, Louisiana, was completed, flowing 1,476 bbls. of 37.6 gravity oil in 24 hours through a three-eighths inch choke. The week in Southwest Texas was unimportant in results but added drilling activity was indicated.

LOUISIANA-TEXAS-ARKANSAS

The Cass County, Texas side of the Rodessa field, was extended a mile southeasterly. The Rodessa field to January 1 is credited with 23,584,677 bbls. production of which 20,431,997 bbls. came from the Louisiana side of the field. That the Troy and Irma fields in Nevada County, Arkansas, may be joined is indicated by a test between the two fields making 10,000,000 feet of gas and 200 bbls. of oil from Nacatoch sand.

ROCKY MOUNTAIN FIELDS

A 4,000-bbl. well, flowing naturally, was the best of the Lea County, New Mexico, crop of producers. The banner well was in the Monument field. New Mexico conservation commission increased the state's allowable from 86,200 bbls. to 92,800 bbls. The upper Rocky Mountain fields experienced a dull week, cold weather greatly hampering operations in Montana.

CALIFORNIA

The Tejon district in Kern County, California, looks like an oil region. A test there flowed at the rate of 10,000,000 feet of gas per day, the gas having a good gasoline odor. The well will be deepened.

Completions in All Fields

(Week Ending January 16, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	40	13	11	64	164	140
Lima Field	0	0	0	0	6	5
Central Ohio	2	11	5	18	56	16
Indiana	3	0	4	7	10	13
Illinois	0	0	0	0	0	0
Michigan	2	1	5	8	49	25
Kentucky	1	0	2	3	16	16
Kansas	18	2	5	25	94	77
Oklahoma	23	0	4	27	119	136
Texas:						
North Central Texas	10	3	16	29	151	118
West Texas	31	0	3	34	107	64
Texas Panhandle	7	1	0	8	32	40
East Central Texas	4	2	0	6	38	12
East Texas	30	0	3	33	132	143
East Texas border	3	0	0	3	29	0
Gulf Coast Texas	14	1	5	20	68	44
Southwest Texas	39	5	15	59	173	92
Total Texas	138	12	42	192	730	513
North Louisiana	1	3	2	6	20	26
Gulf Coast Louisiana	6	0	0	6	30	26
Total Louisiana	7	3	2	12	50	52
Arkansas	0	0	0	0	0	8
Montana	3	2	0	5	9	7
Wyoming	2	0	0	2	9	6
Colorado	0	0	1	1	2	0
New Mexico	15	0	1	16	41	21
Utah	0	0	0	0	0	0
California	11	0	9	20	70	60
Total United States	265	44	91	400	1,425	1,095
Total previous week	421	37	140	598		
Difference	156	7	49	198		

Outstanding Fields—Highlights

(Week Ending January 16, 1937)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	4	4	1	360	140	8,987
Hastings	3	6	2	1,176	128	8,827
Loma Novia	2	5	5	1,780	642	15,455
Seven Sisters	2	6	2	680	356	8,285
Saxet Heights	2	6	0	0	197	9,190
Saxet	8	32	13	1,620	326	23,740
Lopez	3	6	3	1,115	269	6,430
East Texas	23	86	30	1,103	21,990	451,789
Talco	20	27	2	175	171	14,937
OKLAHOMA						
Oklahoma City	4	20	0	0	1,087	162,200
Fitts	4	66	6	11,167	584	72,575
Burbank-So. Burbank	0	4	0	0	2,163	22,500
KANSAS						
Ellis County	2	17	1	2,168	73	4,360
Reno County	6	23	2	492	356	18,682
Russell County	9	48	7	9,134	558	21,310
Rice County	11	39	4	2,376	673	38,155
NEW MEXICO						
Lea County	13	72	15	8,449	1,085	78,990
LOUISIANA-TEXAS						
Rodessa, La.	2	14	1	251	338	50,150
Rodessa, Tex.	4	54	3	829	168	36,050
Gillis, La.	3	6	0	0	56	17,530
Tepetate, La.	2	3	1	226	40	5,737
MICHIGAN						
Porter-Yost	4	6	0	0	424	13,900
Crystal-Montcalm	5	6	0	0	146	3,060

California Field Report

By
L. P. STOCKMAN

POSSIBLE NEW OIL FIELD IN TEJON AREA, KERN COUNTY

LOS ANGELES, Calif., Jan. 18.—If showings found by Reserve Oil & Gas Co. No. 33-3 in section 33-11-19, are any criterion, a new oil field can be expected to be opened in the Tejon district of Kern County in the not distant future. The well is at present bottomed in an oil sand of undetermined potentiality at 4,430 feet and on a recent formation test with the tester open for eight minutes, flowed at a rate of 10,000,000 feet of gas per day through three-eighths inch bean. Top of the oil sand was picked up at 4,404 feet and a string of 8⅝-inch casing has been landed and cemented at 4,381 feet. Bottom-hole pressure has been found to be 2,200 pounds, and, while no oil was produced on the formation test, the gas carried a good gasoline odor. It is the intention to core solid for another 50 feet as the company's engineer is of opinion it may possibly have penetrated only the usual gas cap encountered on top of high pressure oil and gas fields. No. 33-3 is the third well drilled in the Tejon ranch district of Kern County and, while both Nos. 1 and 2 showed oil and gas, they failed to produce commercially. The company has gone back into No. 2 Tejon and will back up and redrill. The Tejon ranch district is near Wheeler Ridge in Kern County and approximately 5 miles southeast of the Wheeler Ridge field. Ohio Oil Co., drilling a wildcat in this area in section 21-11-19, has reached 6,160 feet but has not encountered the possibly productive horizon found by Reserve Oil & Gas Co.

Continental Oil Co. is working on an interesting wildcat in the Wasco district of Kern County and it appears probable additional exploration will be undertaken in this area irrespective of the outcome. Continental No. 1-A Kern County Land in section 8-27-24, blew out a week or so ago, but was brought under control and drilling resumed. The log shows an oil sand and shale at 7,106-19 feet apparently the source of the gas. Approximately 25 bbls. of light gravity oil was produced with the gas from 7,119 feet. Late this week it was at 7,716 feet.

In the Newhall district of Los Angeles Basin, Barnsdall Oil Co. should be in a position within a week to make a production test of No. 1 San Francisco, a wildcat in section 26-3-17. A well saturated oil sand was cored and the 55 feet of oil sand logged appears to show enough saturation to justify expectation the well will be a commercial producer. This oil sand was cored in rocks of Miocene age and the bit was still in the pay when drilling operations were concluded at 6,215 feet. If it results in commercial production, this company will have discovered another field in California.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

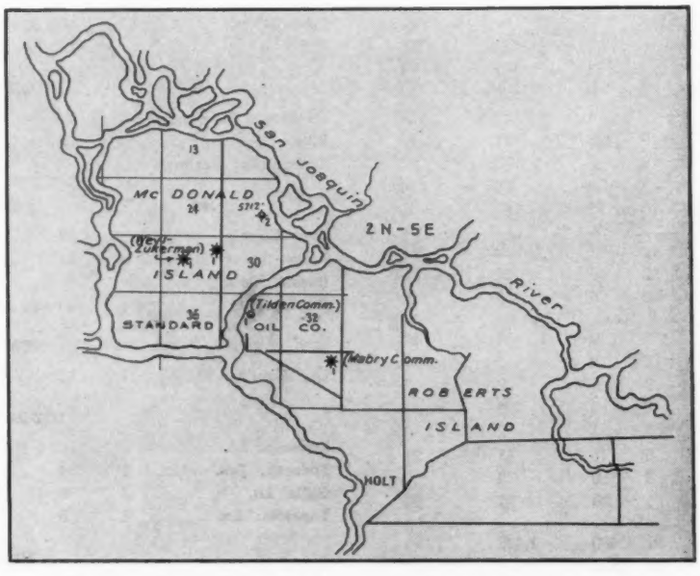
	January 7		December 31			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	.....	.....	174,664	15,879	.....	.....
Gasoline	.....	.....	32,368	2,943	.....	231,860
Kerosene	.....	.....	2,027	184	.....	78,640
Foreign exports:						
Crude oil	40,918	5,845	566,931	51,539	40,918	96,333
Fuel oil	73,907	10,558	743,207	67,564	73,907	141,310
Diesel and gas oil	326,024	46,575	201,944	18,359	326,024	53,150
Gasoline	11,274	1,611	356,091	32,372	11,274	140,572
Kerosene	.....	.....	85,149	7,741	.....	.....
Coastwise-domestic:						
Crude oil	64,749	9,250	64,911	5,901	64,749	63,894
Fuel oil	.....	.....	294,320	26,756	.....	129,337
Diesel and gas oil	9,640	1,377	58,368	5,306	9,640	15,552
Gasoline	292,032	41,719	387,787	35,253	292,032	133,021
Kerosene	.....	.....	4,706	428	.....	6,433

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Foreign exports:						
Crude oil	.....	.....	98,445	8,950	.....	.....
Fuel oil	.....	.....	.....	.....	.....	20,178
Diesel and gas oil	.....	.....	104,794	9,527	.....	.....
Gasoline	.....	.....	45,474	4,134	.....	.....
Kerosene	.....	.....	81,431	7,403	.....	.....
Lubricants	.....	.....	17,871	1,625	.....	.....
Coastwise-domestic:						
Fuel oil	121,686	17,384	.....	.....	121,686	235,430
Diesel and gas oil	39,212	5,602	.....	.....	39,212	.....
Gasoline	198,714	28,388	52,787	4,799	198,714	.....
Kerosene	3,367	481	.....	.....	3,367	.....

Standard Oil Co. has apparently decided to pursue an aggressive development program in the Greeley field, which it discovered late in December, as it is building rigs for No. 11-2 in section 20-29-26, No. 12-1 in section 30-29-26, and No. 14-1 in section 4-30-26. In addition the company has staked location for No. 11-3 in section 20-29-26. Signal Oil & Gas Co., having acquired a lease from Kern County Land Co. in section 6-30-27, is making preparations to drill in the northeast corner. This lease adjoins holdings of Standard Oil Co. in the Greeley field.

Shell Oil Co. is expected to complete its third well in the Ten Section field of Kern County within a fortnight, as No. 34-A-29 Kern County Land, section 29-30-26, is in the pay at 8,061 feet following landing and cementing of a 9⅝-inch water string at 7,815 feet. The company's No. 78 Kern County Land, in section 30-30-26, is nearing the 4,700-foot level. Standard Oil Co. No. 9-1 Kern County Land, an outpost in the Ten Section field, has been plugged back from 8,915 feet to 7,934 feet and a string of 9-inch casing landed at 7,927 feet. It is the intention to test showings found above the bottom of the hole, as they showed enough promise to justify a production test. Superior Oil Co. No. 8 Kern County Land, section 11-30-26, a few miles northeast of Shell's discovery, is in hard shale at 9,500 feet with no outstanding showings. Southeast of the discovery, British American, Inc., has suspended drilling in No. 1-A Smith, section 21-31-27, at 650 feet after landing surface pipe at 155 feet. Associated Oil Co. is approaching the depth at which production should be found in No. 1 Kern County Land in the Rio Bravo district of Kern County. Associated recently landed a string of 8⅝-inch at 7,358 feet to overcome difficulty with a caving shale. Approximately 5 miles north and east of Standard's discovery in the Greeley field, Continental Oil Co. has staked location for a new wildcat in the Rosedale district in the NW quarter of section 12-29-26.



The McDonald Island gas field discovered by Standard Oil Co. consists of two islands in the San Joaquin River delta in San Joaquin County

Santa Maria

R. R. Bush Oil Co. and Hancock Oil Co., jointly developing leases in the Santa Maria Valley field of Santa Barbara County, completed No. 1 California Land, in section 30-10-33, flowing approximately 1,300 bbls. of 15.6 gravity oil. Due to limited storage, the well was shut in before a conclusive production test. This hole was carried to 5,429 feet and plugged back to 4,695 feet and 1,856 feet of 6⅝-inch run in and landed on top of the plug. The 6⅝-inch carried perforations at 2,864-3,649 feet, 4,375-4,695 feet and was cemented through perforations at 4,371 feet. It was swabbed to test the formation at 4,375-4,695 feet but failed to respond. The packer was pulled and the hole bridged to approximately 3,700 feet. To test the formations at 2,864-3,649 feet, 3,290 feet of 2½-inch tubing was run in and the swab run three times. The well followed through at the third run but was shut in. W. D. Shaffer is drilling No. 1 Houk, section 9-9-33, at 3,465 feet in Monterey, which may possibly be productive. Considerable drilling is projected for the Santa Maria Valley field as there are approximately 75 undrilled locations available. Union Oil Co. has abandoned No. 2 Moretti, section 24-10-34, as a duster at 2,248 feet. Top of the Franciscan, basement complex, was cored at 2,181 feet and the well was abandoned as there was no Monterey in evidence.

In the Gato Ridge field of Santa Barbara County, Petrol Corp. has reached 2,040 feet in No. 1 Tognazzini, section 9-8-32. Top of the Monterey was logged at 1,742 feet and the present formation, brown shale, carries oil in the fractures. No. 1 Tognazzini is correlating favorably with Barnsdall Oil Co.'s well on the same structure and should be finished as a commercial producer. O. C. Field Gasoline Corp. has about finished rigging up rotary equipment on No. 1 Continental, on the Gato Ridge anticline, section 4-8-32. Barnsdall Oil

Co.'s next test in the Gato Ridge field will be No. 6 Tognazzini, section 9-8-32. In the Red Mountain district of Ventura County, Continental Oil Co. conducted a formation test on No. 1 Casitas, section 7-3-23, between 4,266 and 4,474 feet and recovered a small amount of gas cut mud and some heavy oil. The bit is at present at 4,525 feet. In the Rincon field, General Petroleum is coring oil sand in No. 5 Ferguson, a tideland project, at 2,558 feet. In the Ventura Avenue field, Associated Oil Co. has reached 10,400 feet in No. 12 McGonigle, in the extreme eastern end. It is the intention to carry it to approximately 10,500 feet. In the Shiells Canyon district of Ventura County, Calumet Oil Co. and Petroleum Securities Co. are making preparations to start wells on their respective leases in section 3-3-19. Honolulu Oil Corp., attempting to prove an extension of the South Mountain field, is at 6,175 feet in No. 1 Hobson, in section 23-3-21.

Wilmington

The Wilmington district, Los Angeles harbor district, adjacent to tidewater, continued to show an increase in drilling and, with a relatively large number of applications filed for permits, is expected to register a further gain during the next 30 days. George F. Getty, Inc., cored top of pay in No. 1-W at 2,476 feet and a string of 13⅜-inch casing has been landed. Correlation work indicates the oil sand was logged 29 feet higher than in No. 1 Patton of General Petroleum Corp. and 68 feet higher than in Royalty Service Corp. No. 1 Community. The latter well is in oil sand at 3,370 feet and should be an early completion. Bankline Oil Co. and Pacific Western Oil Co. are rigging up their respective wells preparatory to an early spud. General Petroleum Corp. is expected to pick up the pay in No. 2 Terminal within a few days and this well, scheduled for completion at approximately 3,600 feet, should be ready for a production test within 15 days. Operators in the Wilmington field are, as a general rule, scheduling wells for completion in the second Terminal zone due to its higher productivity. Development indicates the most productive parts will probably be in the area between General Petroleum Corp. No. 1 Terminal and tidewater. Sunset Oil Co. has completed No. 3 Lupie good for only 50 bbls. of 14.7 gravity from 3,587 feet after the hole had been finished with a 6⅝-inch liner including 301 feet of perforated.

Several wells were put on production in the Huntington Beach field, but none registered substantial production. D. D. Dunlap No. 2 H. B. pumped 71 bbls. of 24.1 gravity from 3,888 feet. Dunlap Trust Oil Co. No. 1 Huntington, at Utica and Delaware Streets, was finished pumping 60 bbls. of 22.8 gravity from 3,993 feet after the hole had been finished with a 6⅝-inch liner including 192 feet of perforated. W. E. McCaslin No. 1-A Ward, at Quincy and Florida Streets, was recompleted pumping 254 bbls. of 25.1 gravity after the hole had been redrilled and deepened to 3,990 feet and finished with a 5-inch liner including 160 feet of perforated. Wilshire Oil Co. has recompleted No. 18 Huntington pumping 315 bbls. of relatively clean 27.6 gravity from 4,812 feet. This hole was cleaned out and redrilled to 4,795 feet and finished with a 4¾-inch liner carrying 480 feet of perforated. The crew was transferred to No. 15 Huntington and preparations started to undertake reconditioning work. V. R. G. Wilbur No. 2 Twining, at Summit and Crystal Streets, was recompleted pumping 84 bbls. of 25.6 gravity from 4,590 feet after the hole had been finished with a 4¾-inch oil string carrying 760 feet of perforations cemented through perforations at 3,832 feet.

Kettleman Hills

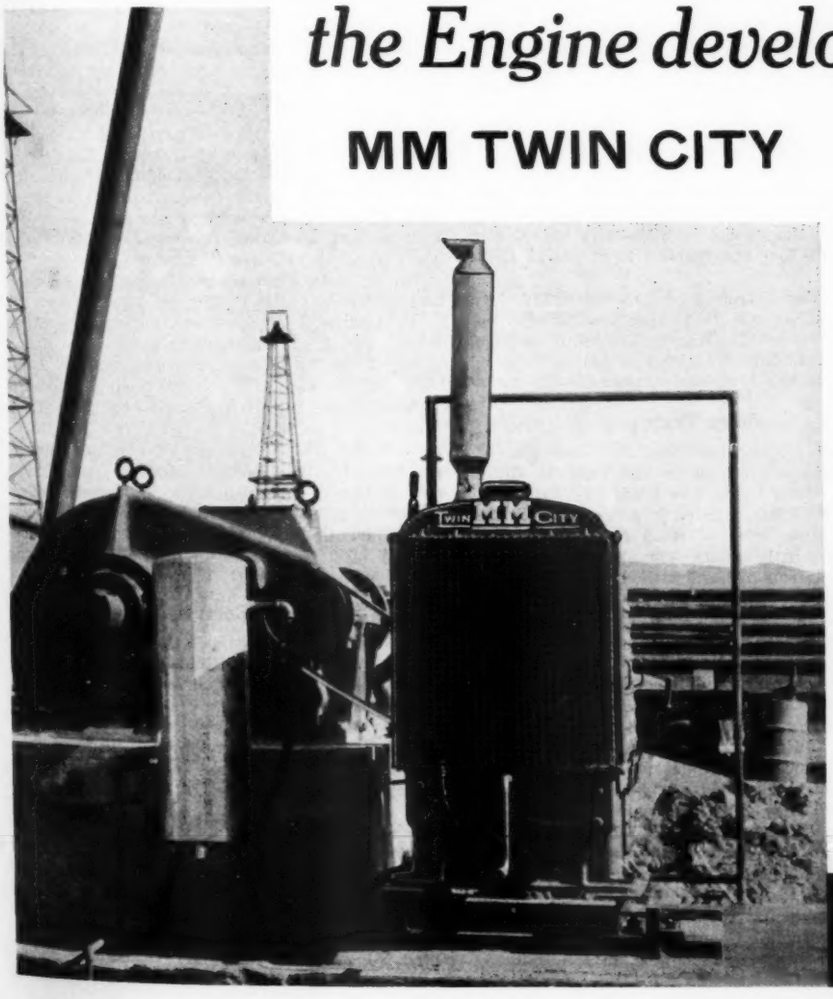
Standard Oil Co. added a well in the Kettleman North dome field, No. 48-35-J, section 35-21-17, bottomed at 8,018 feet and finished with a 7-inch water string cemented through perforations at 7,150 feet, and brought in flowing 377 bbls. of 43.4 gravity and 5,600,000 feet of gas per day. Standard and Kenda are both working on several potential producers and we may anticipate completion of about four wells within 30 days. Kettleman North Dome Association has just concluded drilling on No. 52-30-J, in section 30-21-17, at 8,880 feet. A total of 459 feet of 4¾-inch liner carrying perforations at 8,442-8,548 feet and 8,578-8,876 feet has been run in and landed on bottom. Kenda No. 4-18-J, section 18-21-17, is at 9,302 feet and does not look too promising as the prevailing formation is a barren gray sand.

In the Midway-Sunset field of Kern County, General Petroleum has completed No. 172 Moco, section 34-12-24, pumping 76 bbls. of 14.2 gravity from 890 feet after the hole had been redrilled to 869 feet and finished with an 8⅝-inch liner including 306 feet of perforated. Oil, Inc., has completed its first producer in the Midway-Sunset field, No. 1, section 7-11-23, pumping 198 bbls. of 15.2 gravity from 1,705 feet after the hole had been plugged back from 1,721 feet and finished with an 8⅝-inch liner carrying 242 feet of perforated. In section 3-32-24, Standard Oil Co. completed No. 28-3-D pumping 49 bbls. testing 27.3 degrees and 3 bbls. of water from 4,007 feet after the hole had been finished with a 7-inch liner carrying 150 feet of perforated. Standard's next completion should be No. 216-33-D, which picked up the pay at 2,661 feet. Several wells are being started in the Midway-Sunset field.

Lost Hills

Although approximately 10 wells have been drilled in the extreme western end of the Lost Hills field, operators have apparently not yet found the solution to the puzzle involving the Williamson sand discovered by Associated Oil Co. several months ago. Several of these shallow producing wells have been completed and Associated and Standard may be able to develop some good production with additional drilling. A week or so ago, Standard Oil Co. completed its first shallow zone producer, No. 2 United, pumping 185 bbls. of 13.9 gravity from 1,592 feet. It subsequently built up to 260 bbls. per day. During the week, Associated Oil Co. completed No. 8-A-3 Elliott, section 11-26-20, pumping 281 bbls. of

(Continued on Page 88)



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Eastern Field Report

By STAFF CORRESPONDENT

PROGRESS IN SUMMIT WELL; SOUTHWEST OHIO TEST DRY

PITTSBURGH, Pa., Jan. 19.—The interest in the lower Eastern fields still continues in the deep tests which are reaching an interesting stage. One deep test in Southeast Ohio was dry; the Wirt County test is well along in the lime; and the Summit well made good progress during the week. One Kanawha County Oriskany test is a gas well.

Routine completions were few in number and consisted of 9 dry holes, 12 gas wells and 4 producers with an initial production of 57 bbls., a total of 25 operations. Several of the gas wells were fair.

SOUTHEAST OHIO

The deep test of Ray Miller and others on the George M. Eells farm in section 10, Madison Township, was drilled 10 feet in the Oriskany sand and there was a slight showing of gas followed by salt water. The Corniferous lime was 280 feet thick. This test was 3 miles northeast of the Oriskany well on the Margaret Jenkins farm in section 28 and was important. It appears to be over 50 feet lower on structure than the Nila McIntire test which proved dry or without sand.

One mile north of the Jenkins well, Natural Gas Co. of West Virginia is drilling out the cement on top of the Corniferous lime in the test on the Albert Ketchum farm in section 28.

In Holmes County Ohio Fuel Gas Co. completed a second test on the E. V. Tidball farm, Lot 19, Monroe Township, in the Clinton sand at a depth of 3,206 feet, gauging 400,000 feet with no oil. On Lot 29, this township, the company drilled on the Joseph Mitten farm through the Clinton sand to 3,346 feet. It was dry.

In Licking County, NE quarter of section 1, Hopewell Township, Planet Oil Co. completed a test on the Skinner farm in the Clinton sand. It produced 30 bbls. the first day after shot at 2,970 feet.

SOUTHWEST PENNSYLVANIA

There were several completions in Southwest Pennsylvania: In Amwell Township, Washington County, Union Gasoline Oil Corp. completed No. 4 A. O. Vankirk at 2,961 feet. Top of the Fifth sand was at 2,930 feet with oil at 2,944-47 feet which filled up the casing 1,500 feet. It is estimated good for 20 bbls. initially.

In this township, Howard Lacock & Co. completed the test on the J. M. Hanna farm at 920 feet. The Murphy sand was at 897 feet with 1,380,000 feet of gas at 920 feet. In the same township, Manufacturers Light & Heat completed No. 2 R. A. Rankin at 2,944 feet as a small gas well in the Fifty-Foot sand.

In West Bethlehem Township, Washington County, William Potts & Co. completed the test on the Mowl farm at 3,057 feet as a gas well in the Fifth sand. The sand was at 2,898-2,935 feet with 300,000 feet of gas at 2,930 feet.

In Greene County, Natural Gas Co. of West Virginia completed No. 5 N. P. Headley Heirs at 2,995 feet. Gordon sand was at 2,978-93 feet with about 6 bbls. at 2,989 feet. Pittsburgh Coal was placed at 852-59 feet. It is in Richhill Township.

In Cumberland Township, Greene County, Carnegie Natural Gas Co. has made a location on the S. N. Titus farm. In Dunkard Township, this company is down with a fishing job at 580 feet on the Dale Brand farm and shut down at 245 feet for repairs on the Ella B. Parker test.

In Center Township, Greene County, Penn Ohio Oil & Gas Co. has reached top of the Nineveh Thirty-Foot sand on the William L. Funk farm and drilling in. This is the oil pay in the vicinity and it is about 2,000 feet west of the producer on the Mattie I. Scott farm. Carnegie Natural Gas Co. has reached 1,000 feet in No. 2 J. W. Milliken.

In Wayne Township, Greene County, Myers, Hoskinson and others are drilling at 2,195 feet on the D. L. Headley farm. F. D. Freeland is fishing at 2,080 feet on the Freeland farm. In Richhill Township, Smith McCracken shut down at 1,365 feet on the Willis A. Campbell with the 10-inch casing collapsed. In Springhill Township, North Eastern Gas Co. has a rig on the J. W. McNichols farm.

In Peters Township, Washington County, R. M. Duden and others have a rig on the John McDowell farm. Johnson & Anderson have a rig on the James Bell farm.

In South Strabane Township, Washington County, W. H. Davis is rigging up on the Davis farm. Manufacturers Light & Heat Co. is spudding in No. 3,538 George Burrig and Keystone Gas Co. has a rig on the George Martin farm.

In Somerset Township, Victor Behm & Co. are drilling at 300 feet on the A. M. Hossack farm. In Nottingham Township, Scott & Co. are spudding on the John Crouch farm. In Carroll Township, Mingo Gas Co. is down 1,080 feet in an outside test on the J. A. Adams farm.

In Amwell Township, Union Gasoline & Oil Corp. has reached 1,910 feet in No. 5 A. O. Vankirk and shut down running casing. A. V. Lewis and others are drilling at 2,245 feet on the Ivan Mankey farm. J. Perrin & Co. are down 1,200 feet on the B. A. Bonham farm. Manufacturers Light & Heat Co. have reached 2,100 feet on the J. H. Weaver farm. Carnegie Natural Gas Co. is moving in tools on the N. B. Redd farm.

In South Franklin Township, Carnegie Natural Gas Co. is at 1,670 feet on the Dickerson farm. In Morris Township, this company is drilling at 2,106 feet on the Stockdale farm with top of Big Injun at 1,919 feet and 25,000 feet of gas at 1,926 feet.

In Jefferson Township, Fayette County, Carnegie Natural Gas Co. is drilling at 2,125 feet on the Gaskill farm. In Wayne Township, Greene County, Manufacturers Light & Heat Co. is moving in tools on the J. S. Kiger farm.

Deep Tests

Important is the news that the deep test of William Snee and others on the Summit Hotel property in South Union Township, Fayette County, Chestnut Ridge, made progress during the week. The tools received 5,550 feet in the new hole with very little caving. The new cement spray bailer is being run to harden the walls.

In the deep test on the James McBurney farm being drilled by Norwood Johnston and others in Mount Pleasant Township, Washington County, no hole was made. The bit, lost, is still in the hole and drilled by. A small shot will be placed to drop it out of its present location.

In the Wittmer-Phillips test on the Perry S. Davis farm in Franklin Township, Butler County, there was a showing of oil and gas in the Hundred-Foot sand and the tools are at 1,400 feet. In Independence Township, Beaver County, the test of Laughner-Wittmer on the William Wilsman farm made no progress with the tools still in the hole. The rig for A. J. Wise, Jr., and others test on the Beaver Falls Airport Corp. lease in South Beaver Township has been completed.

In Westmoreland County, Potter Development Co. ran the tools in the old hole on the Indiana Savings Bank Co. lease on the Menocher Highway, 12 miles west of Jonstown towards Ligonier on Laurel Ridge, and reached 6,730 feet or within 31 feet of the bottom of the old hole.

WEST VIRGINIA

The most anxiously awaited test in West Virginia is that of Glenn W. Roberts and others on the Roberts Oil Co. lease on the Burning Springs anticline in Burning Springs district, Wirt County. With top of the Corniferous lime at 4,651 feet the tools have reached 144 feet in that formation. As there is no well near or deep enough, it is impossible to predict the thickness of this formation but it is believed to be about 165 feet.

There was one deep test completed, a gas well. In Elk district, Kanawha County, Columbian Carbon Co. completed a test on the Jeff Medley farm in the Oriskany sand showing for 1,186,000 feet before shot or final depth.

In this district, Columbian Carbon Co. has made a location on the Minia F. Stauffer farm 1,000 feet east of the good gas well on the Graves C. Cavender farm. This company has also made a location on the James R. Jones farm on Coopers Creek 1,600 feet west of the W. H. Burdette gas well. In Poca district, Hays Oil & Gas Co. has made a location on the E. C. Humphreys farm 4,500 feet northwest of the C. C. Fisher Oriskany gas well. The elevation here is 655 feet .

In Elk district, United Fuel Gas Co. reached top of the Corniferous lime at 5,005 feet on the Henry A. Walker farm. This company is drilling at 4,932 feet on the A. J. Bruen and others' lease; shut down at 4,969 feet on the Orth & Walker lease; drilling at 4,046 feet on the W. C. McKee, Guardian, No. 4,689 and 3,955 feet in No. 4,690.

In this district, Benedum-Trees, drilling on the John Slack Heirs farm, reached the Weir sand at 1,860-70 feet with a showing for 10-bbl. well in that formation. The test on the T. W. Walls and others lease is spudding.

No wells in Poca district are near the sand. United Carbon Co. is drilling at 3,720 feet on the L. E. Campbell farm; 4,150 feet on the Ahaz Spencer No. 2. G. W. Lepeire is down 1,425 feet on the J. W. Legg farm. Mullins Gas Co. is at 1,340 feet on the J. F. Corke farm. Columbian Carbon Co. has started drilling on the B. R. Reed farm.

In Geary district, Roane County, no progress was made in the deep test of Godfrey L. Cabot, Inc., on the T. F. Smith farm, still down fishing the bailer at 5,607 feet. In Burning Springs district, Wirt County, this operator resumed and reached 3,550 feet on the Walter Hoffman farm and 2,500 feet on the G. L. Cabot.

Other Completions

The only producer completed in West Virginia was the test of Ralph Roberts on the Charles Scott farm in Murphy district, drilled to 1,934 feet through the Injun sand and good for 1 bbl. a day with 37,000 feet of gas.

In Braxton County, Pittsburgh & West Virginia Gas Co. completed a second test, No. 7,573 W. A. Ramsey, in Birch district, at 1,883 feet in the Injun sand, gauging 175,000 feet.

In Calhoun County, Dunn Mar Oil & Gas Co. drilled on the Knotts Chenowith farm in Washington district to 1,981 feet and it was dry. Big Lime was at 1,708-1,831 feet and Injun sand at 1,831-90 feet.

In Clay County, E. R. and James Reed completed No. 22 W. T. and J. H. Goshorn in Union

(Continued on Page 64)

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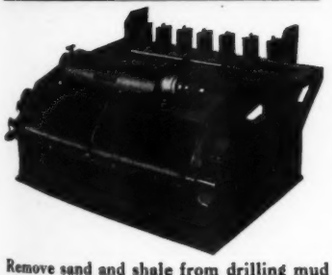

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Among Gulf Coast Drilling Contractors

Grady H. Vaughn, contractor of Dallas, has moved two rigs to the Silsbee field in Hardin County where he is rigging up for No. 7 Brooks and No. 1 Ellery, both interesting outpost tests which will be drilled for the Republic Production Co. and Houston Oil Co. Although Mr. Vaughn has offices in Dallas he is no newcomer to the Gulf Coast district, as he has drilled several wells in the district during the past few years.

T. A. Carlton, president of the C&C Drilling Co. who sold his two rotary outfits several months ago to devote his time to other interests, could not resist the temptation of having to keep up with the drilling operations of at least one rig, so he has purchased a new rotary and has moved it to the northeast extension area of the Hastings field where he will drill No. 1 Maurice Hirsch for the Windsor Oil Co.

George Echols received contract from the Ohio Oil Co. the past week for a deep test to be drilled on the Hazel Roirt lease, 1 mile from production of the Pledger field in Brazoria County. He has abandoned Windsor Oil Co. test in Refugio County and is preparing to complete a second well in the extension area of the Tomoconnor field for Josey and Bruton.

Smith and McDannald are moving one of his large rotaries to the East Hayes Prospect in Jefferson Davis Parish, where he will drill Stanolind Oil & Gas Co. No. 1 United Life Accident Co. to a contract depth of 9,000 feet. The rig at Cankton in St. Landry Parish, used in drilling the discovery well of that field is being torn down after the well was officially completed the past week for an initial production of 21 bbls. of 28 gravity oil per day through a 14/64-inch choke with tubing pressure 1,975 pounds and casing pressure 2,050 pounds.

Edwards Drilling Co. is moving a rotary southeast of the town of El Campo in Wharton County where No. 1 J. Byerly will be drilled for Sam Harrison and others. One rotary is on location at the Magnet field for C. E. McDonald on the Sweet lease which is below 5,600 feet, close to the discovery horizon.

Three new contracting companies with headquarters at Houston were recently organized. Gus J. Cormier has been named president of the Guy Drilling Co. and offices have been opened in the Sterling Building. Ross Bassinger is president of the Tee Dee Drilling Co., while J. E. Carlton is president of the Carlton Drilling Co. with offices in the Esperson Building.

There were 17 new locations reported for the Texas Gulf Coast the past week, Humble Oil & Refining Co. is starting No. 1 P. A. Hoedale at the Hastings field, Ohio Oil Co. is moving in for No. 1 Roirt at the Pledger field, Humble Oil & Refining Co. has derrick up for 9-A P. H. Welder at the Heyser field. Gulf Oil Corp. and Humble Oil & Refining Co. are rigging up at Anahuac for No. 2 Wilcox and No. 9-B White, Kirby Petroleum Co. No. 1 Haden is situated at Cotton Lake, Sun Oil Co. has derrick up for No. 1-B White at Seabreeze, Gulf Oil Corp. is rigging up at Big Creek for No. 73 Davis. Two locations were made at the south extension area of the Gillock field by the Coast Petroleum Co. which will be drilled by Harry L. Edwards.

At High Island, Stanolind Oil & Gas Co. made location for No. 1-B Cade. No. 6 Brooks at Silsbee is a location by the Republic Production Co. and Houston Oil Co., while at the Amelia and Nome fields in Jefferson County, new activity was reported by Humble Oil & Refining Co. and Shell Petroleum Corp. Derrick is up for No. 4-C McDonald at the Cleveland field for Gulf Oil Co., while at Louise, Pure Oil Co. is rigging up for No. 1 Kountze which will be drilled by Smith and McDannald. Only one wildcat was announced, being in Polk County, by Mayo and others No. 1 Mayo.

Cron and Gracey are waiting on orders after testing salt water at a plugged-back depth of around 3,400 feet on Shell Petroleum Corp. No. 1 Maco Stewart which is the first 10,000-foot test drilled along the Texas Gulf Coast. One rig is being moved to a new location at the Flour Bluff field for the Humble Oil & Refining Co. while five other strings of tools are located at South Houston for Stanolind Oil & Gas Co., West Columbia for the Texas Co., Roanoke for Shell Petroleum Corp., and Aransas County for Barnsdall Oil Co.

Nicklos Drilling Co. has spudded No. 2 Harang at the new Valentine field for the Pan American Production Co., is drilling two wells at the Tepetate field for the Continental Oil and has another rig running at the Port Barre field for the Pan American Production Co.

Considerable leasing in the Lower Rio Grande Valley section of Southwest Texas over the past few weeks has directed attention to that area, and presages widespread drilling in several counties during the coming year. Centering in Cameron, Willacy, Hidalgo and Starr counties, the play has resulted in the acquisition of thousands of acres in the past few months. Most recent deals involved a fee purchase of 2,560 acres in Starr County by the Double D Oil Co. of Mission, and the taking of spreads around the new Pantana Oil Co. No. 1 Engleman distillate producer in the Mestanas or La Blanca area of Hidalgo County. The Union Sulphur Co., which operates the Mercedes field of eastern Hidalgo County is reported to have taken 6,000 acres between Edinburgh and Pharr in that county, and the Rio Bravo area southwest of McAllen, near Hackneys Lake is being leased by the Sun Oil Co., H. J. Weinert and the Texas Co.

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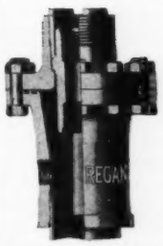

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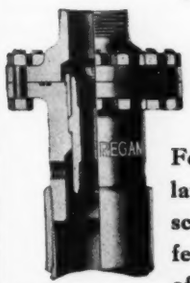

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Kansas Developments

By
DAL DALRYMPLE

BARTLESVILLE SAND PAY IN OLD GAS FIELD PRODUCTIVE

The opening of a Bartlesville sand oil pool in the heart of an old gas area in Cowley County was one of the features of the week in Kansas. Only 18 new oil wells and two gas wells in the state were completed during the week, but these included a 4,000-bbl. well in the Warkentine pool of Harvey County, and large producers in the Bemis, Peter, Trapp and Wellington pools. A Rice County wildcat in section 10-19-9w, was completed as a small producer. The week's completion list also included five failures and two old wells deepened and recompleted.

W. M. McKnab No. 1 Charles, NE SE section 20-32-5, wildcat, opened a new Bartlesville sand pool about 1½ miles east of the old Winfield oil pool, Cowley County. It is in the Tisdale gas area where many gas wells were completed in a shallow sand several years ago. The discovery oil well topped Bartlesville sand at 3,075 feet, had pay at 3,089 feet and was bottomed at 3,097½ feet. It flowed 122 bbls. of oil in seven hours, but was not a completion.

A Rooks County wildcat was given a good chance of opening a new producing area. It was the L. M. Graham and W. W. Kiskadden No. 1 Fike, SW cor. section 9-9-17w, wildcat, which topped Lansing lime at 3,205 feet, encountered water at 3,235-38 feet, but had saturation in the last foot drilled from 3,295-96 feet. It was producing about 1½ bbls. of oil an hour when shut down because of engine trouble and cold weather. Water found above was reported exhausted.

A wildcat in Lane County was being watched with much interest by Kansas oil operators. It was K. C. Bates and others No. 1 Nimocks, C NW NE section 16-16-28w, northeast of the town of Shields, about 2 miles south of the Gove County line. It topped Topeka lime at 3,587 feet and was drilling at 3,650 feet. It was reported running geologically higher than other wells previously drilled in that part of Kansas, and was said to have logged 15 feet higher on top of the Fort Riley lime and 29 feet higher on Topeka lime than Continental Oil Co.'s producer in the Aldridge pool, 18 miles to the southeast in Ness County. Top of Fort Riley was 2,760 feet.

The Sheridan County wildcat being drilled by Otis A. Roberts and C. M. Murray at No. 1 Corrick, C NW section 34-9-26w, another test that was being closely watched, was drilling in Chat at 4,478 feet. Chat was found at 4,462 feet.

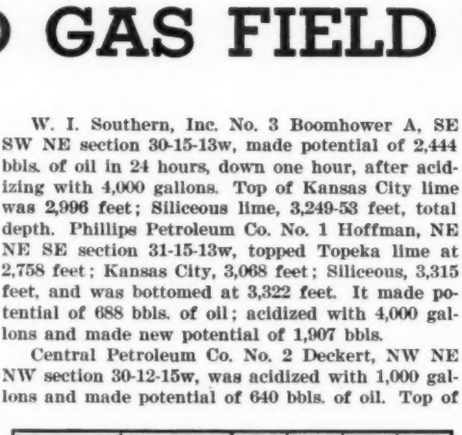
Work was due to start soon at a wildcat in Edwards County. The Royal Petroleum Co., with L. F. Buff and Robert Montgomery, have taken over the block in Edwards County, near Kinsley, on which a derrick was erected last July, but no hole made. It is the No. 1 Krupp, C NE SE section 18-24-19w. J. E. Mabee, Inc., of Tulsa, has the drilling contract and was preparing to move in tools.

Russell County

The largest of seven oil wells completed in Russell County was A. H. Witt No. 5 Witt, NE NE SE section 3-14-15w. It pumped and flowed 2,794 bbls. of oil in 24 hours, at 2,768 feet, total depth. Top of Topeka lime was 2,760 feet. Eight-inch casing was set at 2,741 feet. National Refining Co. No. 1 East Reinhardt A, NW NW NE section 36-14-15w, topped anhydrite at 740 feet; Topeka, 2,625 feet; Kansas City, 2,910 feet; showing of oil at 2,930-35 feet; oil and water at 3,021-25 feet; topped Conglomerate at 3,132 feet; Siliceous lime, 3,139 feet; had Gorham sand at 3,147-35 feet, total depth, and made potential of 2,379 bbls. of oil, completed.

W. I. Southern, Inc. No. 3 Boomhower A, SE SW NE section 30-15-13w, made potential of 2,444 bbls. of oil in 24 hours, down one hour, after acidizing with 4,000 gallons. Top of Kansas City lime was 2,996 feet; Siliceous lime, 3,249-53 feet, total depth. Phillips Petroleum Co. No. 1 Hoffman, NE NE SE section 31-15-13w, topped Topeka lime at 2,758 feet; Kansas City, 3,068 feet; Siliceous, 3,315 feet, and was bottomed at 3,322 feet. It made potential of 688 bbls. of oil; acidized with 4,000 gallons and made new potential of 1,907 bbls.

Central Petroleum Co. No. 2 Deckert, NW NE NW section 30-12-15w, was acidized with 1,000 gallons and made potential of 640 bbls. of oil. Top of



W. M. McKnab has opened a new Bartlesville sand pool at No. 1 Charles, section 20-32-5, in the shallow Tisdale gas field of Cowley County, Kansas.—(Mid-Continent Map Co., Wichita)

anhydrite was 942 feet; Dodge, 2,960 feet; Kansas City, 3,020 feet; total depth, 3,085 feet.

Empire Oil & Refining Co. No. 7 Ehrlich, NE SW SE section 28-13-14w, topped Kansas City at 3,020 feet; Gorham sand, 3,288 feet; total depth, 3,306 feet. It made potential of 154 bbls. of oil, with 3 per cent water. Same operator's No. 1 Krug C, SW SW NE section 9-14-14w, pumped 80 bbls. of oil and 5 bbls. of water in five hours; later, was completed for 75 bbls. of oil and 25 bbls. of water in pay at 3,292-94 feet, total depth. Top of anhydrite was 855 feet; Kansas City, 3,028 feet; Conglomerate, 3,287 feet; Gorham sand, 3,292 feet.

Many New Tests

The following new work was reported in Russell County: Empire Oil & Refining Co. No. 8 Ehrlich, SE SW SE section 28-13-14w, building rig; Skelly Oil Co. No. 3 Boxberger, SW NW NE section 33-13-14w, cellar; Saco Oil Co. No. 2 Gurney, NE SW SW section 23-14-14w, rig; Skelly Oil Co. No. 2 Dumler, NW SW NE section 1-14-15w, moving in material; same company's No. 3 Dumler, SE SW NE section 1-14-15w, location; Gulf Oil Corp. No. 3 Pierce, SW NW SE section 2-14-15w, cellar; Ohio Oil Co. No. 4 Harbaugh, SW SE NW section 25-14-15w, location; W. I. Southern, Inc. No. 6 Sellens heirs A, SW SE SW section 30-15-13w, cellar; Shell Petroleum Corp. No. 6 Michaelis, SW SE NE section 31-15-13w, building rig; W. I. Southern, Inc. No. 4 Michaelis, NW NE NW section 31-15-13w, rotary rig; same operator's No. 9 Shaffer, SW NW NE section 31-15-13w, location; Gulf Oil Corp. No. 1 Michaelis, NW NW SW section 32-15-13w, moving in material; Skelly Oil Co. No. 2 John Neidens, SW SW NE section 32-15-13w, cellar; same operator's No. 3 John Neidens, NE SW NE section 32-15-13w, cellar.

Texas Co. No. 5 Anschutz, SW cor. section 1-14-15w, plugged back from 3,394 feet, total depth, to 3,150 feet, acidized and pumped 17 bbls. of oil and 32 bbls. of water in four hours. Transwestern Oil Co. No. 2 Polcyn B, NE NW SE section 10-14-15w, had a hole full of oil at 3,270 feet, total depth. Carter Oil Co. No. 1 Detrich, SW cor. section 8-15-13w, flowed 217 bbls. of oil in 24 hours, at 2,888 feet, total depth, after perforating liner and acidizing. Coralena Oil Co. No. 16 Trapp, SE NW SE section 30-15-13w, had Siliceous lime at 3,253-57 feet, total depth, and pumped 2,003 bbls. of oil in 18 hours and 45 minutes. W. I. Southern, Inc. No. 3 Sellens heirs A, SE NE SW section 30-15-13w, was bottomed in Siliceous lime at 3,266-70 feet, acidized with 4,000 gallons and pumped 1,250 bbls. of oil in 15 hours.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending January 16, and for the preceding week, was as follows:

	Barrels	
	Jan. 16	Jan. 9
Oxford City	2,600	3,200
Burrton	14,650	14,025
Ritz-Canton	6,100	6,275
Hollow-Nikkel	3,600	3,575
Voshell	2,800	2,800
Ellsworth:		
Lorraine-South Lorraine	5,450	4,125
Other pools	1,030	1,400
Rice-Barton counties:		
Bloomer	2,210	1,825
Chase	10,095	7,450
Geneseo	2,205	1,870
Raymond	2,245	1,795
Silica	14,120	6,630
Keesling	2,310	1,185
Hauschild	2,060	2,180
Miscellaneous Rice	5,120	4,435
Miscellaneous Barton	4,045	3,245
Russell County:		
Fairport	2,295	2,975
Gorham-E. Gorham	5,040	6,905
Russell	2,480	2,170
Sullivan	3,045	2,795
Trapp	3,855	2,405
Miscellaneous Russell	4,595	6,295
Sedgwick County:		
Valley Center	1,295	1,320
Greenwich	1,320	1,350
Robbins	1,170	1,390
Miscellaneous Sedgwick	1,155	1,295
Ellis County	4,360	4,185
Kingman County	655	650
Stafford County	3,420	1,605
Greenwood County	9,700	9,750
Butler County	17,500	17,150
Other fields	27,500	28,600
Total Kansas	169,025	158,225

Rice County

Shell Petroleum Corp. and associates completed No. 1 H. Soeken A, C NW section 10-19-9w, Rice County wildcat, after plugging back from 3,300 feet, total depth, to 2,923 feet. It was acidized with 1,000 gallons and swabbed 175 bbls. of oil and 175 bbls. of water in eight hours. Later it pumped 360 bbls. of oil and 631 bbls. of water in 24 hours, and on completion test pumped 68 bbls.

of oil and 128 bbls. of water. Top of Kansas City was 2,896 feet; Conglomerate, 3,212 feet; Simpson, 3,240 feet; Siliceous lime, 3,300 feet.

Other Rice County completions were as follows: Gulf Oil Corp. No. 1 Murphy, SW SW NW section 18-19-9w, Siliceous lime, 3,272 feet; total depth, 3,304 feet, plugged back to 3,301 feet; acidized and shot, but water intruded and it was dry and abandoned.

Keith and others No. 6 Volkland, NW NE SE section 20-19-9w; Kansas City lime, 2,965 feet; Siliceous, 3,254 feet; pay, 3,261-65 feet; total depth, 3,266 feet, acidized with 2,000 gallons; made potential of 763 bbls. of oil.

Gulf Oil Corp. No. 6 M. H. Malone, SE NE NW section 18-20-9w; Siliceous lime, 3,297 feet; total depth, 3,312 feet; acidized with 1,000 gallons; made potential of 1,423 bbls. of oil, with 14 bbls. of water.

Garden and others No. 2 McCracken, SW NE NE section 10-21-7w; Chat, 3,380 feet; based Mississippi, 3,446 feet; total depth, 3,453 feet; pumped 15 bbls. of oil in 24 hours.

Operations Starting

New work in Rice County: Continental Oil Co. No. 2 Ainsworth A, SW SE NW section 30-18-7w, cellar; Westgate-Greenland Oil Co. and others No. 1 Johnson, NE SE NE section 17-21-7w, location; Empire Oil & Refining Co. No. 2 Weiland, SW SW SE section 32-19-9w, building rotary rig; Jack Robertson No. 2 Smith, NE SE SW section 32-19-9w, cellar; Gulf Oil Corp. No. 9 Stoltz, NW SW NW section 32-19-10w, building rotary rig; same operator's No. 10 Stoltz, C S half N half NW section 32-19-10w, cellar; same operator's No. 3 Wendell, SW NW SE section 32-19-10w, building rotary rig; Gulf Oil Corp. No. 3 Knop, NW cor. section 33-19-10w, cellar; same operator's No. 4 Knop, SE NW NW section 33-19-10w, cellar; same operator's No. 8 Stoltz, Jr., SE NW NW section 5-20-10w, building rotary rig; same operator's No. 9 Stoltz, Jr., NW NE NW section 5-20-10w, building rotary rig; J. H. Tatlock No. 5 Drew, NW NE SW section 5-20-10w, cellar.

Gulf Oil Corp. No. 5 Stoltz, Jr., SE SW NW section 5-20-10w, topped Siliceous lime at 3,302 feet; total depth, 3,314 feet; swabbed 111 bbls. of oil in four hours; acidized with 1,000 gallons and was waiting. Stanolind Oil & Gas Co. No. 10 Specht, topped Siliceous lime at 3,313 feet; was bottomed at 3,328 feet, and swabbed at the rate of 38 bbls. of oil an hour.

Barton County

The banner well of the week in Barton County was Lario Oil & Gas Co. and Atlantic Refining Co. No. 3 Peter, NE NE NW section 24-20-11w, in the Peter pool. It made potential of 2,683 bbls. of oil in 24 hours, down three hours. Production was from Siliceous lime, topped at 3,260 feet; total depth, 3,271 feet. Operators set 8-inch casing at 3,258 feet.

National Refining Co. completed No. 5 McLean, NW SE SE section 25-17-11w, at 3,309 feet, total depth. It made potential of 1,494 bbls. of oil. Top of anhydrite was 635 feet; Siliceous lime, 3,282 feet; first saturation at 3,288 feet. At 3,298 feet it was acidized with 2,000 gallons and pumped 693 bbls. of oil. It was then deepened, getting an increase at 3,305-09 feet.

Helmerich & Payne and others No. 1 Cook, NW cor. section 28-18-15w, had sand at 3,481 feet; was bottomed at 3,497 feet, produced 27,000,000 feet of gas and was completed.

Gulf Oil Corp. No. 4 Zahorsky, C N half N half SE section 14-20-11w, topped Siliceous lime at 3,299 feet; salt water intruded at 3,350 feet, total depth; plugged back to 3,341 feet, pumped 156 bbls. of oil and 960 bbls. of water in 24 hours: plugged back to 3,327 feet, shot and cleaned out, pumped 15 bbls. of oil and 50 bbls. of water in 24 hours and was completed.

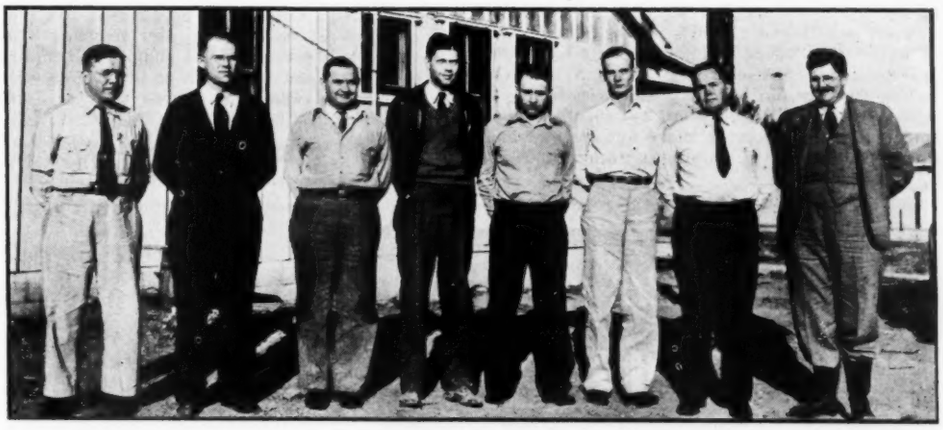
Minnehoma Oil & Gas Co. No. 1 Smith, NW NE NE section 20-18-13w, wildcat, had a hole full of water at 3,355-57 feet and was dry and abandoned at 3,362 feet, total depth. Top of Kansas City lime was 3,097 feet; slight showing of oil at 3,241-43 feet; Siliceous lime, 3,331 feet; showing of oil at 3,346-50 feet.

Lario Oil & Gas Co. and Atlantic Refining Co. No. 5 Peter, SE NE NW section 24-20-11w, was moving in material. Continental Oil Co. No. 1 L. W. Ainsworth A, SE SE NE section 33-16-13w, was a cellar.

Texas Co. No. 1 Peterman, NE NE SE section 13-17-11w, topped Siliceous lime at 3,287 feet; total depth, 3,325 feet; swabbed 90 bbls. of oil in 24 hours; acidized with 1,000 gallons and was waiting. Republic Oil Co. No. 3 McLean, NW NW SE section 25-17-11w, pumped 146 bbls. of oil in five hours after acidizing with 3,000 gallons; total depth, 3,319 feet. It previously had pumped 354 bbls. in 24 hours after acidizing with 1,000 gallons. Magnolia Petroleum Co. No. 1 Mueller, NW NW NE section 1-18-11w, was bottomed at 3,291 feet, acidized with 1,000 gallons and pumped 110 bbls. of oil in 10 hours. Gulf Oil Corp. No. 1 Meyer, SW SW SE section 13-20-11w, topped Siliceous lime at 3,261 feet, cored to 3,271 feet and had 300 feet of oil in the hole.

Ellsworth County

Empire Oil & Refining Co. No. 1 Brown, SE SE NW section 1-17-9w, Ellsworth County wildcat, topped Siliceous lime at 3,257 feet, and was dry and abandoned at 3,288 feet, total depth. Top of Kansas City lime was 2,858 feet.



Empire Oil & Refining Co. group at Chase, Rice County, Kans. From left to right: Tom McGinn, clerk; Ben Cooper, chemist; Louis Bosley, production clerk; Paul Harper, geologist; W. G. Smith, chief clerk; J. M. Gallegly, resident production engineer, and S. P. Gates, district superintendent

Lyon County

Clyde Fred and others No. 1 Bruce, NW cor. section 13-18-10, wildcat in Lyon County, was dry and abandoned at 2,291 feet, total depth. Six-inch casing was set at 2,120 feet.

Young and others No. 1-A Murphy, SE NW NE section 32-21-11, Lyon County wildcat, was shut down at 1,110 feet.

Harvey County

The big well of the week in Kansas was at Western Kansas Oil & Refining Co. and others No. 1 Denno, C NW SW section 12-23-2w, Warkentine area, Harvey County. It made potential of 4,072 bbls. of oil in 24 hours at 2,983 feet, total depth. Production was from Chat, topped at 2,968 feet. Six-inch casing was cemented at 2,968 feet.

McPherson County

Dickey Oil & Refining Co. and Gulf Oil Corp. No. 5 Goering, SE SW SE section 17-21-1w, McPherson County, was acidized with 4,000 gallons and pumped and flowed 930 bbls. of oil in 24 hours, completed. Top of Hunton lime was 3,311 feet; total depth, 3,345 feet.

New work in McPherson County: Continental Oil Co. and others No. 1 Kindblade, NE SE SW section 20-21-1w, cellar; Ohio Oil Co. No. 10 Decker, SE NE SE section 20-21-1w, location; Continental Oil Co. No. 3 Blair, SW NW SW section 21-21-1w, location; same operator's No. 2 Wenger, SW NW NW section 21-21-1w, location; same operator's No. 5 Hetzke, SE NE NE section 29-21-1w, location.

Lario Oil & Gas Co. and others No. 4 Lagree, NE NE NW section 31-19-1w, topped Chat at 2,919 feet; total depth, 2,968 feet; acidized with 500 gallons, and pumped 123 bbls. of oil and 21 bbls. of water in 21 hours.

Sumner County

Another good producer was completed in the Wellington pool, Sumner County, at Stelbar Oil Corp. No. 1 Rothrock, NW NE NW section 4-32-1w. It topped Chat at 3,636 feet; was bottomed at 3,699 feet; acidized with 1,000 gallons and 3,000 gallons and flowed 1,297 bbls. of oil in 24 hours.

Only first report of new work in Sumner County was Stelbar Oil Corp. No. 4 Barlow B, C E half W half SE section 33-31-1w, rigging up rotary.

Courtney Davis and others No. 1 Hawkins, NE NW NE section 1-32-2e, topped Stalnaker sand at 2,055 feet; Kansas City lime, 2,462 feet; Siliceous

A group of Stanolind Oil & Gas Co.'s efficient young men who work in the Kansas fields. They are W. M. Warren, district production foreman; R. J. Gaynor, chief clerk and N. G. Cox, production clerk, at the field headquarters in Gorham, Russell County

lime, 3,225 feet; had a hole full of water at 3,235 feet and 3,241 feet, and was dry and abandoned at 3,256 feet, total depth.

Reno County

Only new well completed in Reno County was Olson Oil Co. and Sinclair Prairie Oil Co. No. 6 Adkins, NW SW SW section 35-23-4w. It topped Chat at 3,258 feet, was bottomed at 3,315 feet, and produced 8,000,000 feet of gas.

Empire Oil & Refining Co. No. 1 Haury B, SW cor. section 1-23-4w, an old well, was plugged back from 3,631 feet to 3,423 feet; shot and acidized; pumped and flowed 272 bbls. of oil and 35 bbls. of water in 24 hours, and was recompleted. Same operator's No. 4 Scheuchzer, C N half N half NW section 20-24-4w, an old well, was deepened from 3,356 feet; had saturation at 3,375-81 feet; was bottomed at 3,385 feet; acidized and pumped and flowed 220 bbls. of oil, with 40 per cent water, recompleted.

Reno County operations reported for the first time were: Helmerich & Payne No. 1 Benson, NE cor. section 5-25-6w, wildcat, cellar; same operators' No. 1 Evans, NE NE SE section 29-24-6w, wildcat, location; R. J. Wallace and others No. 2 Tucker, SW NE SW section 20-24-4w, location; Texas Co. No. 9 Collins, C S half N half SE section 17-24-4w, location.

Skelly Oil Co. and others No. 3 Chesshire, SW NW SE section 3-24-4w, topped Chat at 3,276 feet and was bottomed at 3,373 feet. It was flowing at the rate of 10 bbls. of oil an hour, estimated. Shell Petroleum Corp. No. 4 Seedle, NW SW NW section 16-24-4w, was waiting after acidizing with 3,000 gallons. It previously had pumped and flowed 314 bbls. of oil and 4 per cent water after acidizing with 1,000 gallons. It topped Chat at 3,283 feet; total depth, 3,366 feet.

Ellis County

Another large well was completed in the Bemis pool, Ellis County, at British American Oil Producing Co. No. 1 Bemis, NW NW SW section 22-11-17w. It made potential of 2,168 bbls. of oil in 24 hours, at total depth of 3,412 feet, in Siliceous lime topped at 3,408 feet. It had Simpson formation at 3,397 feet, and at 3,400 feet swabbed 1,816 bbls. of oil in 24 hours.

Uscan Oil Co. No. 6 Bemis, C S half N half NE section 31-11-17w, was an abandoned rig.

Ryan Consolidated Corp. No. 2 Bemis B, SW SW NW section 22-11-17w, had Siliceous lime at 3,375-87 feet, total depth, and pumped 1,820 bbls. of oil in 18 hours and 40 minutes. It was not a completion. Champlin Refining Co. No. 1 Meir, NE NE SW section 36-11-18w, had Siliceous lime at 3,625 feet and 2,900 feet of oil rose in the hole in two days.

Eastern Fields

(Continued from Page 60)

district at 2,205 feet as a gas well. Big Lime was at 1,990-2,169 feet; Big Injun, 2,169-87 feet, with 281,000 feet of gas at 2,170-87 feet.

In Gilmer County, Ferrell & Cain completed a test on the Weaver & Stalnaker farm in DeKalb district in the Injun sand, total depth 1,921 feet, which gauges 300,000 feet.

In Kanawha County, Starcher and others in drilling the deep test on the G. W. Wolf farm found gas in the Salt sand and offset the Oriskany gas well with a shallow No. 2 which was drilled through the Salt sand, 1,022-1,170 feet. It was dry and filled up with water.

In Marion County, Monroe & Laughlin completed a test on the Simon Moore farm in Mannington district at 2,693 feet, the Fifty-Foot sand gauging 1,237,000 feet. Pittsburgh Coal was at 732-740 feet.

In Monongalia County, Convex Glass Co. completed a second test on the Thornton Raber farm in Cass district in the Gas sand at 1,111 feet. It gauges 185,000 feet. Pittsburgh Coal was at 413-422 feet.

In Ritchie County, Sable Oil & Gas Co. drilled No. 1 A. Hall Heirs in Grant district to 1,658 feet and it was dry. In this district Reno Oil Co. deepened No. 2 I. L. Jackson through the Injun sand to 1,959 feet, and it was also dry.

In Roane County, L. C. Young and others completed the test on B. F. Fields farm in Harper district as a gas well at 1,489 feet. Salt sand was topped at 1,439 feet with 528,000 feet of gas at 1,443-89 feet.

In Tyler County, Clarence L. Fetty drilled on the P. E. Boyles farm in Union district through the Cow Run sand to 957 feet and it was dry.

In Upshur County, Cumberland-Allegheny Co. completed a test on the Cecil Snider farm in Buckhannan district at 4,450 feet. The Riley sand was at 4,109-18 feet with 75,000 feet of gas at 4,110-17 feet.

In Wetzel County, Union Gasoline & Oil Corp. drilled on the G. W. Sole farm in Church district through the Fifth sand to 3,226 feet. It was dry. Pittsburgh Coal was at 895-900 feet.

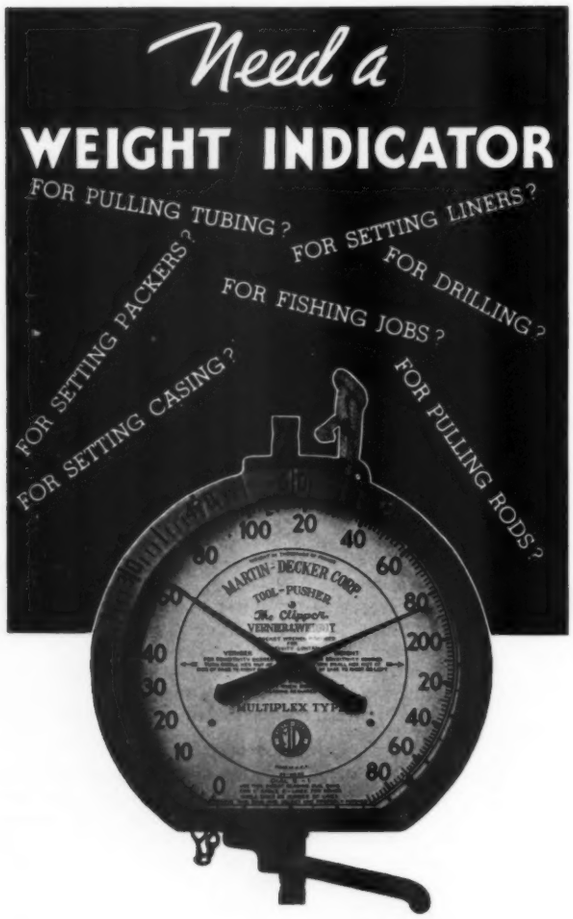
New Work

In Boone County, Owens-Illinois Glass Co. has a location on the Letha Myers "B" lease in Washington district. In this district this company will drill No. 17 Little Coal Land Co. In Scott district this company has a location for No. 26 Cassingham Coal Co. and No. 20 Allen & Pryor.

In Cabell County, Ruby Petrie has a location on the Ella N. Hensley farm in Guyandotte district. In Gilmer County, Pittsburgh & West Virginia Gas Co. has a permit on the Aurora Flo Peters farm in Glenville district. In this district, Massey & Jarvis will drill on the R. G. Linn Heirs farm.

In Lincoln County, Wysong Gas Co. has a location on the J. W. Smit farm in Sheridan district. In Jefferson district, Abbott Gas Co. has a location on the J. C. Abbott farm.

In Ritchie County, W. H. Bickel has a permit for No. 3 John H. Hyman in Murphy district. In Grant district, W. R. Pierson has a location on the A. S. Simmons farm. In Murphy district, W. A. Bickerstaff has a location on the A. V. and E. L. Summers farm.



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Texas and Louisiana Gulf

LOCATE SHALLOW SALT DOME IN WESTERN MISSISSIPPI TEST

By F. L. SINGLETON

HOUSTON, Tex., Jan. 18.—The discovery of the first salt dome structure in western Mississippi and the indications of an oil field being developed on the La Belle Prospect in central Jefferson County, together with the completion of a second 10,000-foot producer at the Lafitte field in Jefferson Parish, Louisiana, were the outstanding developments along the Gulf Coast district the past week.

An extensive exploration program is expected to get under way in Mississippi as a result of a shallow salt dome structure uncovered by Sun Oil Co. No. 1 Scanlon and Semmes Lumber Co., section 28-4n-15w, Lamar County, which topped rock salt at 2,522 feet and is coring ahead in that formation below 2,545 feet. The only production in that state has been developed at Amory in the northeastern part of the state and in the Jackson field, both of which are producing gas. Numerous tests have been drilled in Mississippi and some encouraging showings of oil and gas have been encountered in wildcats, and with the addition of this salt dome structure discovery which offers an ideal trap for oil, the possibilities have been encouraged considerably.

On the La Belle Prospect

Sun Oil Co. No. 2 J. E. Broussard located on the La Belle Prospect, central Jefferson County, showed possibilities of opening oil production when it flowed an estimated 5 bbls. of fluid per hour of which 5 per cent was oil and the balance wash water. Before the well had cleaned itself, the tubing sanded up, requiring the operators to shut it in and it will be several days before the value of this new strike will be known as the screen and liner will have to be pulled and reset for another test. The hole is bottomed in 11 feet of sand at 8,217 feet and was tested from a screen setting made from 8,190 feet which is the bottom of the casing seat. While the well was flowing the tubing pressure registered 3,100 pounds and casing pressure 550 pounds. No. 2 Broussard is located about a mile due east of a dry hole drilled several months ago by the same company which was abandoned at 9,848 feet after several attempts for a production test were unsuccessful due to mechanical trouble.

The second completion for the recently discovered Seabreeze field, Chambers County, was made by Sun Oil Co. which completed No. 2 White for an initial production of 24 bbls. of distillate in 24 hours through an eighth-inch choke with tubing pressure 2,800 pounds and casing pressure 3,000 pounds. The hole is bottomed at 8,868 feet and the well was completed after plugging back to a depth of 8,755 feet. No. 2 White is located in the J. T. White Survey, section 128, approximately 2½ miles southwest of the company's No. 1 Acom, the discovery well. Location has been made for No. 1-B White, midway between the two wells in the William May Survey, section 116.

Cotton Lake Outpost Produces

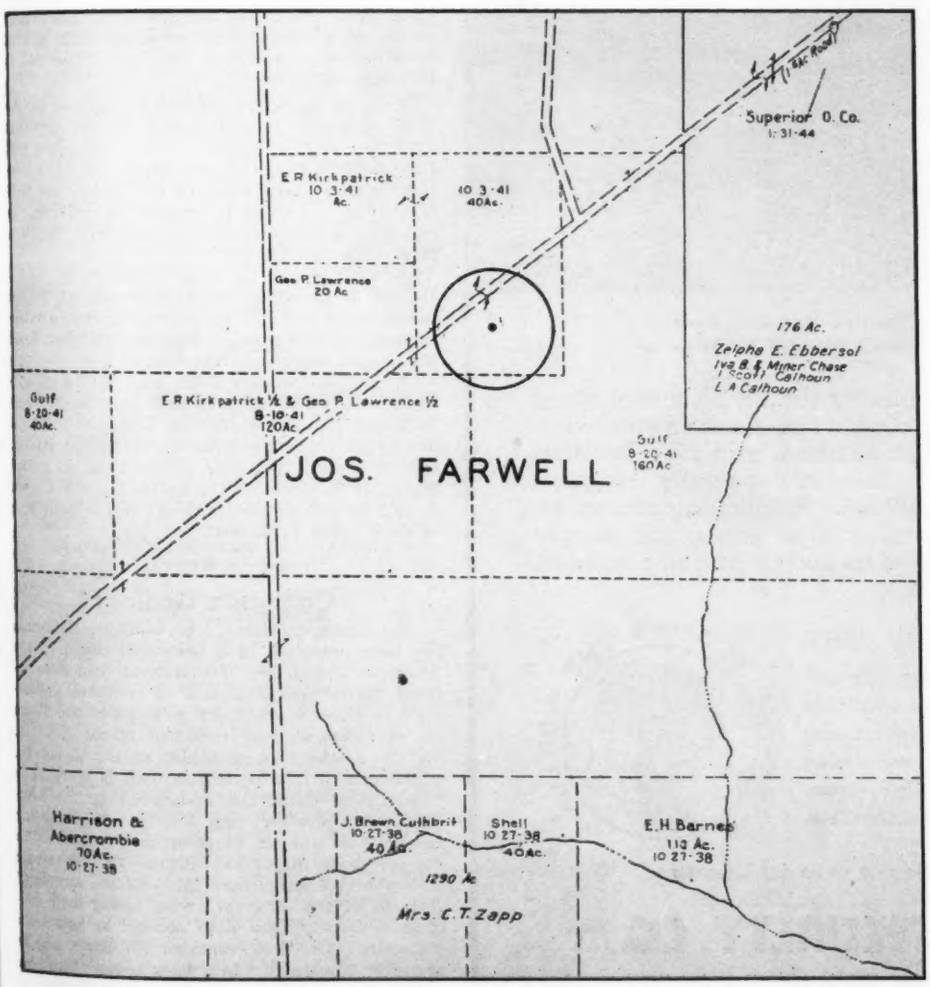
Two and a half miles south of production at Cotton Lake, Chambers County, Salt Dome Oil Corp. No. 1-A A. B. Lawrence has been completed for a distillate well and the fuel is being used in drilling the company's No. 1-B Lawrence situated 704 feet due south. No. 1-A is flowing 24 bbls. of distillate per day through an eighth-inch choke with tubing pressure 1,200 pounds and casing pressure 1,600 pounds. The casing was perforated from 6,489-93 feet after several attempts to complete the well through lower perforations proved unsuccessful. Approximately 6,330 feet due west, Kirby Petroleum Co. has made location for No. 1 W. D. Haden in the Chambers County School Land Survey.

Gulf Oil Corp. No. 1 Gibson located a half mile southwest of the discovery well of the Lockridge field, Brazoria County, came in a gas well, due to the casing being set too high. The operators will probably run a short section of blank liner and retest. The hole is bottomed at 6,358 feet, with 9⅝-inch casing cemented at 6,337 feet. The size of the production string of casing indicates that unless the well produces oil in commercial quantities, the hole will be deepened to the 8,000-foot horizon, which showed indications of producing in a deep test drilled several months ago. East of this well, Shell Petroleum Corp. No. 1 Prison Farms cored to a depth of 6,365 feet and after running an electrical coring test, 7-inch casing was cemented at 6,344 feet. Both of these wells are bottomed in the discovery horizons and seemed assured of being oil wells. Northeast of the discovery well, approximately 5,700 feet, Gulf Oil Corp. No. 1 Reiss is preparing to make a drill stem test of a deeper sand found at 6,985 feet which was encountered after it had failed to pick up the discovery horizon.

In the same county, but located on the Sandy Point Prospect, C. B. Bunte and others No. 1 J. A. Fite, reported last week as looking encouraging due to a showing of gas encountered in the Marginulina sand around 6,400 feet, is shut down at a total depth of 7,008 feet while a decision is being made as to whether casing will be run for a production test of a gas sand, indicated on an electrical coring test from 6,440-41 feet. It is doubtful if casing will be run, as a section of salt water was encountered below the gas showing, and interest has waned around this test, although considerable trading is still reported in the general area.

Silsbee's Best Well

The best producer to be completed at the Silsbee field, Hardin County, was made by Republic Production Co. and Houston Oil Co. No. 4 Brooks, which flowed 422 bbls. of pipe line oil per day



Bammel Prospect, Harris County, showing location of George Lawrence and others No. 1 Zappa where preparations are being made to run casing to test a sand from 6,206-26 feet.—(W. W. Zingery, Maps, Houston)

through a quarter-inch choke from a depth of 6,970 feet. It is 933 feet due east of No. 3 Brooks and is said to have encountered more sand than any of the other producers. No. 5 Brooks is drilling below 6,530 feet and No. 7 Brooks and No. 1 Ellery, both outpost tests, are being rigged up.

Hamman Exploration Co. No. 1 J. H. Crocker, a half mile north of the discovery well of the Bay City field, Matagorda County, is preparing to test after perforating the casing at 9,529-31 feet. A drill-stem test made last week from 9,405-13 feet showed salt water. No. 2 Cleveland is a new location being located 466 feet from the north line and 466 feet from the east line of the E. Hall Survey.

George Lawrence and others No. 1 Zappa, in the Bammel area, Harris County, shut down at 6,525 feet for several weeks, is scheduled to be tested within the next week or so, as casing is reported to have been ordered. A sand from 6,206-26 feet showed 8 ohms resistivity and 65 millivolts porosity on an electrical coring test, which indicates a gas sand with some distillate production.

Revival at Pledger

The first activity reported for the Pledger field, Brazoria County, in several months was announced by the Ohio Oil Co., which is moving in a rig for No. 1 Hazel Roirt, located about a mile from production in Lot 39 of the Cedar Grove plantation in the D. McNeil Survey No. 26.

In the Ace field, Polk County, Peyton Brothers are rigging up No. 2-B Kirby & West, located 3,651 feet east of No. 1-B in the G. S. Thomas Survey. On a 24-hour gauge, No. 1-B Kirby & West flowed 80½ bbls. of oil through an 18/64-inch choke with tubing pressure 1,325 pounds and casing pressure 1,425 pounds.

Coastal Louisiana

In the northern part of the Lafitte field, Jefferson Parish, Coastal Louisiana, Texas Co. No. 1 R. C. Milling extended production 933 feet north and gave the field its second 10,000-foot producing well when it flowed 1,476 bbls. of 37.8 gravity oil per day through a three-eighths inch choke with tubing pressure 1,960 pounds. The hole is bottomed in oil sand at 10,040 feet and is flowing through perforated casing at 10,020 feet. One of the interesting features of these two 10,000-foot wells is that they were drilled with the rig mounted on floating barges and no protection casing was cemented below approximately 2,200 feet.

Superior Oil Producing Co. No. 1 Savoie, the discovery well of the Cankton field, St. Landry Parish, flowed 21 bbls. of 28.1 gravity oil per day through 14/64-inch choke with tubing pressure 1,975 pounds and casing pressure 2,050 pounds. It is estimated to be making 1,700,000 feet of gas daily. It is producing from the Miocene sand through perforated casing at 5,320-23½ feet.

Lafourche Parish

Pan American Production Co. No. 1 Harang, the discovery well of the Valentine field in Lafourche Parish, has shown an increase in production and on a last 24-hour gauge through various chokes, it flowed 510 bbls. of 39 gravity oil with tubing pressure 430 pounds and casing pressure 700 pounds. No. 2 Harang located 660 feet north and 45 degrees west of the discovery in section 8 has been spudded.

A deeper producing horizon for the Gillis field, Calcasieu Parish, was opened by Union Sulphur Co. No. 2 Bell, located a half mile northwest of production in section 12-9s-8w. Bottomed in 2 feet of sand at 8,290 feet, the well was completed after 5-inch casing had been cemented at 8,282 feet, flowing 275 bbls. of fluid per day of which 55 per cent was wash water. The principal producing horizons are found at 6,700 and 7,000 feet. On the north side of the field, another test exploring deeper producing horizons, is the company's No. 12 Barber in section 1, drilling below 8,032 feet.

On the south flank of the Jennings field, Acadia Parish, Shell Petroleum Corp. No. 2 Community tried to blow out while drilling below 7,185 feet, causing the drill stem to stick. Oil sand was cored from 7,004-19 feet and it was decided to drill deeper after excessive gas pressures made a drill stem test of that section impossible. Location is in section 40-9s-2w.

Gulf Oil Corp. No. 22 Erwin, situated in the East Hackberry field, Cameron Parish, recovered 1,563 feet of 31.8 gravity oil on a drill stem test from 6,154-94 feet, the total depth, but after perforations had been made in the casing, the well flowed dry gas which is expected to result in the casing to be reperforated at a lower level. Location is in section 12-12s-10w.

At the Leesville field, Lafourche Parish, Texas Co. No. 51 Leesville, located in section 34, flowed 1,263 bbls. of pipe line oil per day through a three-eighths inch choke from a depth of 5,047 feet. Sand showing oil was cored from 5,027-47 feet.

While Continental Oil Co. was waiting on special 2½-inch drill stem to drill plug, preparatory to testing No. 1 O. C. Hebert, bottomed at 12,216 feet at the Abbeville Prospect, Vermilion Parish, another wildcat test was approaching its record depth. It is Stanolind Oil & Gas Co. No. 1 Fred Stovall located to the southeast which is drilling in shale below 11,328 feet.

California Geology

The geological history of southern California has been presented in a new book issued by the American Association of Petroleum Geologists entitled "Structural Evolution of Southern California," by R. D. Reed, chief geologist of the Texas Co. of California and president of the A.A.P.G., and J. S. Hollister, geologist of the Texas Co. (California). In a sense this book is a sequel to "Geology of California," published by the association but dealing only briefly and discussing casually the subject of structural evolution. In the new book the authors discuss the diastrophic history of the region and interpret the structural features of the different areas, basing their conclusions largely upon data secured by petroleum geologists. The book contains 157 pages and is profusely illustrated. In a back pocket there is a 27x31-inch tectonic map of southern California. The book ($2) may be obtained from the American Association of Petroleum Geologists, Box 1852, Tulsa.

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MILE SOUTHWEST EXTENSION TO CASS SIDE RODESSA FIELD

By MITCHELL TUCKER

SHREVEPORT, La., Jan. 18.—A 1-mile extension to the southwestern producing limits of the Rodessa field in Cass County, Texas, featured the news during an otherwise uneventful week.

Total accumulated production from the bi-state Rodessa pool amounted to 23,584,677 bbls. on January 1, 1937. Of this amount, 20,431,997 bbls. had been produced from the Louisiana side of the field and 3,152,700 bbls. from the Texas side. Daily average production last week was 86,283 bbls., 50,154 bbls. in Louisiana and 36,049 bbls. in Texas. Louisiana wells were more seriously retarded by the recent reallocation upon a bottom-hole pressure and acreage basis than those of Texas. During the last seven-day period Louisiana wells averaged 149 bbls. per day, while Texas wells averaged 226 bbls. Closer spacing, with a resulting smaller average acreage factor for the Louisiana wells of course, accounts in a large measure for this difference.

Cass County Allowables

In announcing individual well allowables last week for Cass County wells, the Texas commission set the acreage factor at 6.785551 bbls. to the acre, and bottom-hole factor of .04952289 per pound. A total of 2,484.55 acres were considered productive and were allocated to oil wells. The average bottom-hole pressure was 2,381 pounds, with the gas waste limit on 133 wells set at 62,632,000 feet per day, and the 10 high gas wells set at 4,706,000 feet. Total daily allowable for January was set at 32,175 bbls.

Beginning January 1 the United Gas Public Service Co. and United Production Co. (operating Texas properties) began delivering 7,500 bbls. of crude daily to Atlantic Refining Co. and 4,000 bbls. to Shell Petroleum Co. through their Rodessa-Longview line. They continue to deliver the 2,000 bbls. daily to East Texas Refining Co.

Rodessa Extension

Through the completion of W. F. Lacey No. 1 Lewis in the H. Holbert Survey of Cass County, the southwestern producing limits were extended about 1 mile. From a total depth of 6,089 feet, elevation 294 feet, the Dees was topped at 6,047 feet, saturation at 6,082 feet, top of the Young oil sand at 6,084 feet, and after setting 7-inch at 6,078 feet the well flowed 124 bbls. in 24 hours on initial test through three-sixteenths inch tubing choke, tubing pressure 325 pounds, casing pressure 800 pounds.

Rodessa Completions

Lion Oil Refining Co. No. 7 Wynn, NE SW section 9-23-15, in the extreme eastern edge of the field, was completed and classified as a gas well, gauging 40,000,000 feet through 2½-inch tubing, tubing and casing pressure 2,200 pounds, total depth 6,065 feet.

Phillips Petroleum Co. No. 2 Interstate, NE NW section 16-23-15, was originally drilled to 6,123 feet, at which point it tested 85 bbls. in nine hours through one-quarter inch tubing. Casing had been set at 6,111 feet. A squeeze job was applied to the open hole and after drilling out cement to 6,013 feet the casing was perforated from 6,000 to 6,007 feet and the well flowed 251 bbls. initially in 18 hours through five-thirty-seconds inch choke, casing pressure 900 pounds, tubing pressure 300 pounds.

Magnolia Petroleum Co. No. 2 H. F. Walker, Wilson Robinson Survey, Texas, flowed 198 bbls. in eight hours through three-sixteenths inch tubing choke, casing pressure 725 pounds, tubing pressure 500 pounds, total depth 6,055 feet.

United Production Co. No. 9 J. T. Stewart Unit, John Collom Survey, Texas, flowed 21 bbls. per hour through three-eighths inch tubing choke, casing pressure 425 pounds, tubing pressure 200 pounds, total depth 6,040 feet.

Bienville Parish

After topping the Travis Peak at 6,965 feet, Seaboard Oil Co. No. 1 McGee, section 3-16-6, Bienville Parish, Louisiana, drilled a highly porous sand in the Travis Peak from 6,675 to 6,712 feet, but saturation was entirely lacking. Coring is being continued below 7,340 feet.

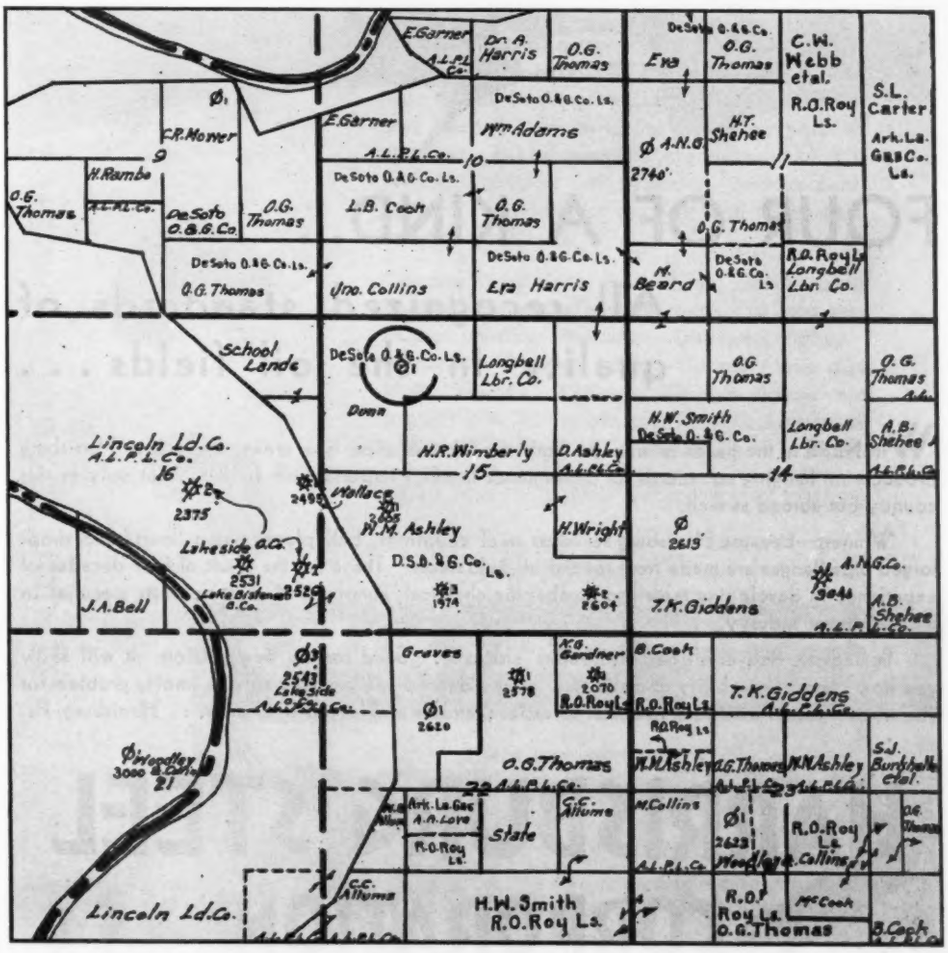
Lide & Greer No. 1 Smelling, SE SW NE of section 13-16-5, offset to their Lower Glen Rose gas discovery well, reported disappointing results from test of the same horizon last week. The sand was cored from 5,869 to 5,979 feet and drilled to a total depth of 5,923 feet, and drill stem test 5,838 to 5,923 feet showed 15 fourbles of salt water in 10 minutes. The same operator's Davis Brothers No. 1, five-eighths of a mile north of Smelling No. 1, is producing large gas volumes from the Hill sand at 5,865 to 5,875 feet, after having plugged back from 6,128 feet where salt water was encountered. Lenticular occurrence of saturated sands in this general section seems to account for the irregularity of production. Operators plan to drill ahead to the 7,300-foot contract depth level for exploration of the Travis Peak sands.

Bossier Parish

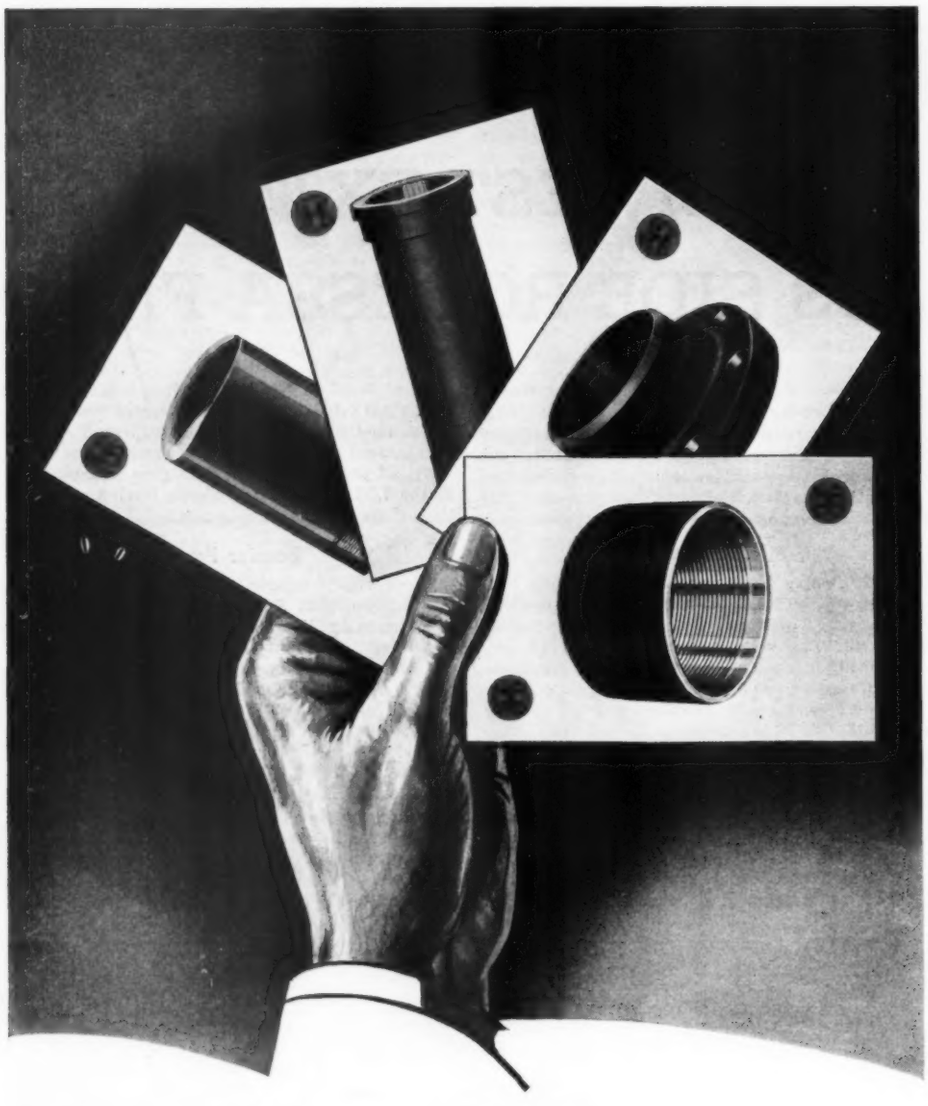
Four new locations were staked in the Sligo oil and gas field, Bossier Parish, last week. Two were made by Arkansas-Louisiana Gas Co. in the northeastern portion of the field productive of gas only, which are near the site of that company's new gasoline plant. The other locations were on the southwestern flank of the field where oil production has recently been discovered by United Gas Public Service Co.

Marion County Tests

Arkansas No. 1 W. S. Ford, Chas. Grayson Survey, 7-mile extension between southwest Rodessa production and the Jefferson test, is drilling below 4,621 feet in lime, after topping red beds at 3,692 feet, elevation 332 feet. The Jefferson



DeSoto Oil & Gas Co. No. 1 Dunn and Olsen, section 15-16n-10w, which discovered the Lower Glen Rose productive in the shallow Lake Bistineau gas field, testing 20,000,000 feet of saturated gas, total depth 5,235 feet.—(Globe Map Co., Shreveport)



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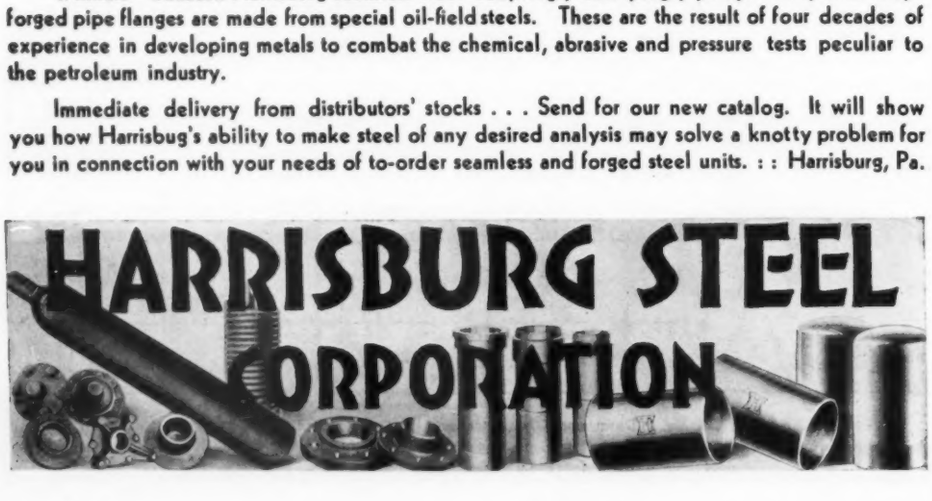

test, with elevation of 221 feet, topped red beds at 3,740 feet, indicating on first marker that the Ford test is 159 feet higher than the well 7 miles southwest.

Holcomb & Thomason No. 1 Lizzie Henderson, R. Bennigton Survey, in Marion County, Texas, wildcat extension test north of Jefferson, has recemented the 8⅝-inch pipe at 2,210 feet and is coring ahead in the lower Gloyd at 6,095 feet. Oil string has not yet been run here.

Grant Parish

Perry and others No. 1 Barnett, SE NE SE section 17-9-1e, Grant Parish, has been junked and abandoned at total depth of 1,604 feet, after casing collapsed.

Ouachita Parish

Hope Production Co. No. 6 Call, section 38-19-3w, Ouachita Parish, was a routine completion in the southern portion of Monroe gas field, gauging 3,000,000 feet of gas at 700 pounds rock pressure, total depth 2,160 feet.

Sabine Parish

F. G. Cox and Whitehurst No. 1 Whitney Corp., NW NE section 8-9-13, Sabine Parish, Lower Glen Rose test of Converse oil field, was completed last week as a gas well at a plugged-back depth of 4,365 feet, gauging 10,000,000 feet, tubing pressure 1,950 pounds. This test was drilled to a depth of 5,503 feet where the oolitic lime series was penetrated and blowouts occurred, gas estimated at 50,000,000 feet and containing large quantities of high-grade distillate. Mechanical condition of the hole prevented completion of this well, and after bridging over was completed at its present level, 4,365 feet. Additional tests are expected to give the lower showings thorough exploration.

L. Swift No. 1 Long Bell Lumber, NW SE SW section 11-8-14, was dry at 3,486 feet and abandoned.

Webster Parish

Standard Oil Co. of Louisiana No. 1 E. Fudicker, NW quarter section 2-17n-9w, Webster Parish, 1½ miles southwest of the gas-distillate area of Sibley, tested 10,000,000 feet of gas on drill stem test at 5,639 to 5,720 feet through one-half inch top and bottom choke, and salt water on test 5,820 to 5,840 feet. Operators are coring below 5,890 feet for a thorough exploration of the Lower Glen Rose and Travis Peak section here, around which they own extensive acreage.

Ohio Oil Co. completed the first producer in the 8,100-foot sand, now named the Bodcaw sand, in No. 1 Bodcaw Lumber Co. Account 4, NE SE section 28-21-10, flowing 235 bbls. of 59-degree gravity distillate through one-quarter inch tubing choke, with from 2,000,000 to 3,000,000 feet of gas, 2,500 pounds tubing pressure, 3,200 pounds casing pressure, sand topped 8,172 feet, total depth 8,188 feet.

Magnolia Petroleum Co. No. 5 Ira Cox, SE quarter section 23-21-10, drilled the Bodcaw sand from 8,088 to 8,125 feet and only slight gas and distillate saturation was noted. Operators are proceeding to deepen this well to the 8,300-foot and possibly the 8,425-foot showings formerly obtained in Ohio Oil Co. discovery deep test here.

ARKANSAS

Nevada County

Situated about 2 miles northwest of the newly discovered Troy field, and about 1 mile southeast of Irma field, John R. Lewis No. 1 W. Haynie, SW SW NE section 5-14-20, Nevada County, Arkansas, indicated a possible connection of the two pools by flowing about 15,000,000 feet of gas, 4,000 bbls. salt water, and 200 bbls. of oil from the Nacatoch sand, total depth 1,169 feet. Well is now standing for orders.

Ouachita County

Activity in the Permian lime area north of Smackover is taking on new life as Lion Oil Co. rigs up for No. 1 Levy, over 1 mile northwest of present production in NW cor. of section 21-15-15.

Phillips Petroleum Co. is washing to bottom and preparing to deepen No. 1 W. Rose, SW NE SE of

section 27-15-15, which has been temporarily abandoned for several months at total depth of 4,819 feet. Casing will be set soon and drilling carried deeper into the "big lime" of Permian age.

Union County

Phillips Petroleum Co. is also rigging up the temporarily abandoned No. 1 Morgan, section 18-18-17, Union County, near Schuler, for deepening from the present depth of 4,270 feet. It is reported that this exploratory test may be carried as deep as 8,000 feet.

MISSISSIPPI

State Oil and Gas Supervisor Henry N. Toler of Jackson, Miss., stated in a recent report that at the close of 1936 58,092,000,000 feet of gas had been withdrawn from the Jackson gas field. At the present rate of consumption geologists estimate that the field cannot last more than six or seven years. Eleven wells on flank of the producing area were abandoned last year.

Estimated Daily Production

The estimated daily gross production of all pools for week ending January 15, follows:

NORTH LOUISIANA

	Bbls.
Bellevue	720
Caddo light	4,150
Caddo heavy	2,590
Converse	845
Cotton Valley heavy	290
Cotton Valley light	550
DeSoto and Red River	1,350
Elm Grove	345
Haynesville	3,375
Holly	150
Homer	2,550
Pleasant Hill	135
Rodessa	50,150
Sarepta-Carterville	390
Sligo	435
Urania	2,750
Zwolle	815
Total	71,590

SOUTH ARKANSAS

Champagnolle	1,960
El Dorado	2,015
Lisbon	280
Miller County	520
Nevada	760
Smackover light	2,065
Smackover heavy	17,455
Stephens	590
Troy	250
Urbana	1,560
Total	27,455

Texas side of Rodessa field—36,050 bbls. daily.

Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending January 2 totaled 287,659,000 bbls., according to the Bureau of Mines, a decrease of 858,000 bbls., comprising decreases of 796,000 and 62,000 bbls. in stocks of domestic and foreign crude, respectively. Daily average imports of crude were 31,000 bbls., the lowest since January, 1936. Daily average crude runs to stills were about 3,030,000 bbls., or 75,000 bbls. above the average for the week ending December 26, and the highest since October.

STOCKS OF CRUDE PETROLEUM

Grade of crude oil—	Dec. 26	Jan. 2
Pennsylvania Grade	3,986,000	3,985,000
Other Appalachian	689,000	726,000
Lima-NE Indiana-Michigan	839,000	773,000
Illinois-SW Indiana	9,726,000	9,782,000
North Louisiana and Arkansas	10,446,000	10,198,000
W. Texas and SE New Mexico	28,342,000	28,209,000
East Texas	19,195,000	19,338,000
Other Mid-Continent	115,152,000	114,465,000
Gulf Coast	24,719,000	25,071,000
Rocky Mountain	25,851,000	25,852,000
California	30,528,000	30,228,000
Foreign	2,144,000	2,082,000
Total reported weekly	271,617,000	270,709,000
Estimates of unreported stocks	16,900,000	16,950,000
Total stocks	288,517,000	287,659,000

Taubert & McKee, drilling contracting company which has been operating out of Tyler, Tex., has moved its offices to the Petroleum Building in Fort Worth, Tex. D. C. SHAY, geologist, recently in charge of Devonian Oil Company's Shreveport, La., office, will be connected with the firm.

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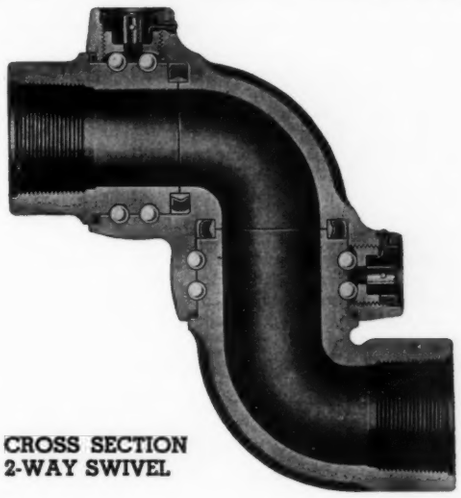
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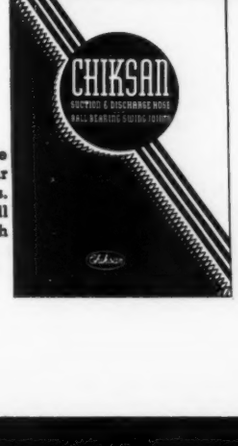

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Southwest Texas District

By GEORGE WEBER

NEW SANDS AND EXTENSIONS AND NUECES GAS DISCOVERY

HOUSTON, Tex., Jan. 18.—Added drilling activity in both proven and wildcat areas got under way during the past week, as new tests started in all parts of the Southwest Texas district. Aside from indications of sand extensions in the Saxet field, new sand and field extension showings in the Alta Mesa field, and an apparent gas discovery in Nueces County, new developments were unimportant in comparison with the discoveries since the first of the year.

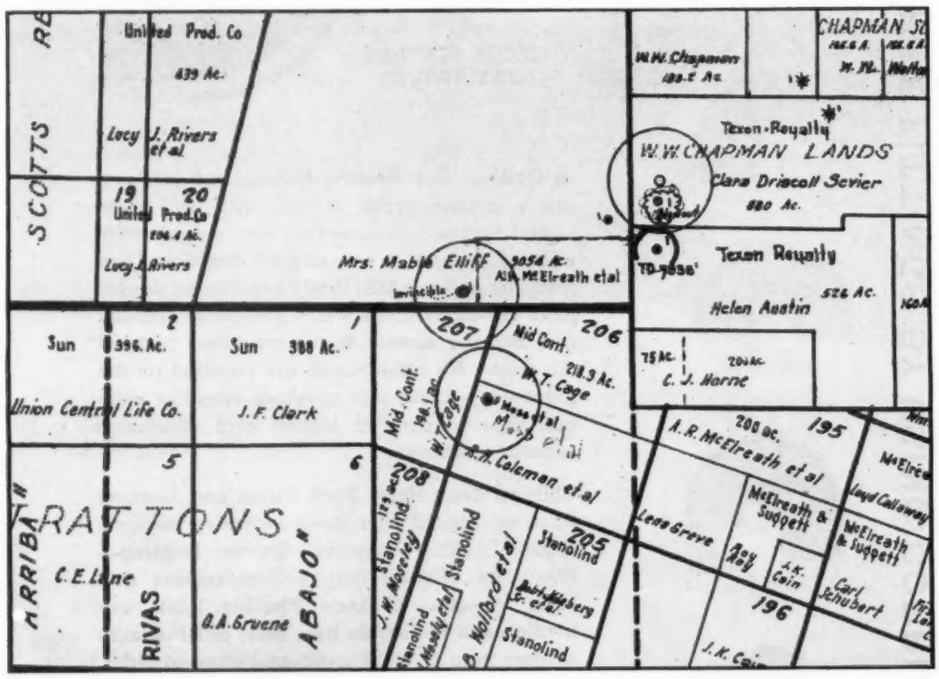
Two tests in the Saxet field, Nueces County, showed indications of production extensions, while two others limited production in the 5,800-foot Frio and the 4,800-foot sands. In the northern part of the field Oso Drilling Co. No. 4 Roark cored sand at 4,840-48 feet with a show of oil and was testing at latest reports. If completed for a producer it will extend the 4,800-foot sand to production 1,500 feet to the northeast. The test is located in a 106-acre tract in the Villareal Grant.

South of the field, Bryant & Howell cored two sands in No. 1-A Kocurek, each showing oil. The test is bottomed at 4,601 feet and casing has been set at 4,423 feet. The test is located adjacent to the crater of the Bryant & Howell No. 1 Kocurek, which blew out last month from a total depth of 3,100 feet. That area is about 1 mile south of the town of Clarkwood, and 3,500 feet west and slightly north of the Nelson field, opened a year ago by Sherman Nelson No. 1 Buckholt.

Tested Salt Water

The 5,800-foot Frio sand was delimited on the southwest when Republic Natural Gas Co. No. 3 Ordner tested salt water at 5,821-27 feet. The test will be carried deeper to explore production prospects in the 6,300-foot horizon. Another test which is being carried deeper is Pan American Production Co. No. 3 Solar Sevier, which failed to find production in the 4,800-foot sand, defining that horizon on the north and east.

Completions were up in Saxet during the week, with a total of 13 wells brought in. Five oilers and a gasser were brought in producing from the Clarkwood sand at 4,400 feet. Two 4,800-foot wells were completed, and six 5,800-foot Frio producers were finaled. The deep horizons at 6,300 feet and 6,700 feet were getting added attention with four tests going to the 6,300-foot sand and two being carried deeper to the latest discovery at 6,700 feet. Other drilling in the field was diversified, with tests on the other four producing sands.



Three wells are drilling in the new Sullivan field of Nueces County. The pool was discovered by Texon Drilling Co. in No. 1 Austin indicated by the heavy circle. One of the drilling wells, Texon Drilling Co. No. 2-B Sevier is a directional well to kill the No. 2 Sevier which blew out in November, caught fire and cratered.—(Porter Regenold, Maps, Corpus Christi)

Clara Driscoll Field

The Clara Driscoll field gained another producer during the week when Wellington Oil Co. brought in No. 9 Sevier in the 3,800-foot sand. In the northwest section of the field, W. D. Hines No. 1-A Sevier was making about 52 bbls. of distillate per day on a one-fourth inch choke, with casing pressure at 1,600 pounds. The test is bottomed at 6,035 feet but is producing from sand at a reported depth of 5,825-50 feet.

In the same county, one producer was added to the Flour Bluff field, while others were on the sand for early completion. The outstanding wildcat of the area at present, Wellington Oil Co. No. 1 Stockton made gas on a production test recently, and was being tested after reperforating at 4,718-25 feet. The test is located in the Laurels Farm Tracts, 12 miles southwest of Corpus Christi. In the same area, a failure ended drilling in the Allen and Seaboard Oil Co. No. 1-A Chapman which was abandoned at 7,006 feet. The operators plan to begin drilling on No. 2 Chapman immediately. That test is located about 9,000 feet southwest of the Wellington wildcat, and 7,000 feet southeast of the No. 1-A which was a workover of an old wildcat drilled in 1934 by Texas Seaboard.

To the west in Jim Wells County, added activity is beginning in the Bentonville field. Stanolind Oil & Gas Co., LaJita Corp. and Danciger are beginning tests in the area, two of which will be northwest edge tests.

San Patricio County

In San Patricio County a deep test is being drilled in the Plymouth field by Plymouth Oil Co. The well, No. 65-C Welder was testing at 6,575 feet at latest reports. To the south, in the Taft field, an outpost test was staked, which will be drilled in a drainage ditch. The semiwildcat to be drilled by W. B. Craig will be watched with considerable interest due to its location southwest of the field.

Aransas County's wildcat test, Barnsdall Oil Co. No. 1 Edwards was drilling below 7,300 feet at latest reports. Information is being withheld on the test, and unauthenticated reports state that showings have been encountered.

New Foley Producer

The Bee-Goliad county sector again came to the attention of operators during the week, with the completion of a producer in the Foley district of Bee County, and the starting of another wildcat test in Goliad County. The Foley well, Texas Prospecting Co. No. 1 Holzmark was completed in sand at 4,000 feet. Sun Oil Co. has set surface casing in the No. 2 Fromme, located 3,000 feet southeast of No. 1 which showed gas and oily mud at 5,139-47 feet. Blanco Oil Co. & Buchanan are spudded on No. 1 Hartzendorf, a wildcat located northeast of the Cosden field and north of old Pettus.

In the Laredo district, the greatest drilling activity centered as usual in the Lopez, O'Hern, Escobas, Haynes, Seven Sisters and Loma Novia fields of Webb, Zapata and Duval counties. Six wildcats were abandoned in that area during the week, but other tests were started to sustain exploration in many sections of the district. Drilling has begun in two fields of Jim Hogg County. The Colorado field, opened in August, 1936, will receive its third test, as Meek No. 3-A Martinez drills for the field sand at 3,019 feet. The second test in the field was abandoned in October with a fishing job. The old Alworth pool of the same county will be tested by French Oil Co. in No. 4 Garza, which is drilling below 500 feet.

Dry Hole in El Mesquite

The El Mesquite field in southern Duval County received another setback during the week, with the abandonment of Hamil & Smith No. 3 Benavides, which was carried to a total depth of 3,502 feet.

No new developments occurred in the Pearsall field of Frio County, which came into prominence again last week. The Amerada Petroleum Corp. No. 8 Halff & Oppenheimer, which showed for production in the Edwards lime, was still fishing for cable tools lost in the hole when the well blew out from a total depth of 6,230 feet.

(Continued on Page 80)

Rocky Mountain Area

By
T. R. INGRAM

MONUMENT WELL MADE 4,000 BBLS. NATURAL PRODUCTION

DENVER, Colo., Jan. 18.—New Mexico Conservation Commission boosted the state's allowable on Jan. 1 from 86,200 to 92,000 bbls. and made a change in the basis of proration in the Hobbs pool.

The Phillips Petroleum Co.'s wildcat in Pueblo County, Colorado, was plugged and abandoned at 2,202 feet. One well is resuming in Archuleta County. There were no completions in Colorado.

Harold L. Ickes, Secretary of the Interior, predicts higher prices for crude after Jan. 1, 1940, in awarding contract for Salt Creek royalty oil. The Sinclair-Wyoming Oil Co. No. 10 Wertz, oil discovery in the Tensleep in Carbon County, Wyoming, could not be killed to drill deeper and is flowing 75 bbls. per hour. A block of Indian leases, part of which are on the Pilot Butte dome, is being offered for sale by the superintendent of the Shoshone Indian Reservation. Bay-Elwell No. 1 Joss 6 miles southeast of Lance Creek, had water in the Dakota and is shut down for orders.

One small well was completed for gas in Hardin County, Montana, and there were three completions in Cut Bank. One gas well was completed by the Ohio Oil Co. in the Kevin-Sunburst field. Last named field is practically shut down on account of weather. Montana-Dakota Utilities test on the Baker-Glendive anticline is at a critical depth. A wildcat in Yellowstone County was dry and abandoned and R. C. Tarrant No. 1 Sayre, the discovery well, pumped 140 bbls. first day.

NEW MEXICO

The Oil Conservation Commission of New Mexico put into effect important changes in the proration schedules for the Lea County pools on January 1, 1937. The allowable outlet for the state for the first half of January was increased to 92,800 bbls. from 86,200 bbls. for the last half of December, a gain of 6,600 bbls. daily. The commission was informed that beginning January 1 there would be a market demand for 22,000 bbls. daily from the Monument pool, as against former commitments of 12,000 bbls. daily. The increased market was due to the completion of an extension of the Gulf Oil Corp.'s pipe line system to its wells in that field. At the same time the Hobbs pool was put on a new basis of proration.

The Hobbs pool, almost from the beginning, was prorated on the basis of 75 per cent on an acreage basis and 25 per cent on potentials. Three years ago there was a change which placed wells in what was designated as water units on a 60-40 basis. On January 1 the entire field went on the 60-40 basis and the designation was changed to marginal and non-marginal units as in the other pools. Marginal units are those which can not produce the acreage unit allowable and are allocated approximately the quantity of oil they can produce. Non-marginal units are those with an average daily potential production equal to or larger than the acreage unit allowable. Unit potentials are based on the daily average capacity of all wells thereon. The new order provides for the adjustment of potential at six months intervals beginning March 1, 1937, based on bottom-hole pressures, methods of testing new wells and requirement of permits for acidization.

The field allowance for the first half of January is 21,897 bbls. daily, from which is deducted 97 bbls. special allowance for four units. Total number of units is 244 and field potential 2,129,526 bbls. Unit allowable is 55 bbls. per day and potential factor is .00430385.

The 22,000 bbls. daily allocated to the Monument pool is prorated among 263 units, of which eight are marginal wells and 43 are new wells. The new wells are allowed 85 bbls. each per day and the non-marginal units 68 bbls. plus potential allocation.

Monument Field

The southeastern sector of the Monument field, Lea County, registered the largest flush well of the week at Skelly Oil Co. No. 1 Lucille Van Etten, C NW SW section 9-20-37. It had initial production of 4,152 bbls. of oil naturally through tubing in 24 hours, with gas estimated at 1,000,000 feet. Production was from pay at 3,815-80 feet, total depth.

Anderson-Prichard Oil Corp. No. 1 Britt B, C SE SW section 5-20-37, had pay at 3,781-3,870 feet, total depth, and flowed 624 bbls. of oil through tubing naturally in 24 hours, completed.

On the northeast edge of Monument, Repollo Oil Co. No. 2 Bordages, section 21-19-37, was acidized two times with 3,000 gallons when bottomed at 3,982 feet, but swabbed only 5 bbls. of fluid, mostly sulfur water. It encountered more sulfur water when deepened to 3,997 feet and was abandoned. It apparently defines the northeast flank of the pool, being the third failure in that sector.

Seven oil wells were completed in the Eunice pool. Two States & Southern Petroleum Exploration No. 2 M. L. McQuatters, C SE NE section 11-21-36, flowed 1,064 bbls. of oil through tubing in 24 hours after treating with 4,000 gallons of acid. Production was from pay at 3,798-3,854 feet.

Other Eunice pool completions: Shell Petroleum Corp. No. 2 State J, C SW SE section 32-20-37; pay, 3,781-3,841 feet, total depth; acidized and shot; flowed 40 bbls. of fluid, 11 per cent basic sediment and water, with 1,300,000 feet of gas. Humble Oil & Refining Co. No. 8 State-Aggies, C NE NW section 31-20-37; pay, 3,787-3,840 feet, total depth; flowed 264 bbls. of oil naturally in 24 hours through tubing choke. Skelly Oil Co. No. 1 State G, C NW SE section 30-20-37; pay, 3,815-40 feet, total depth; acidized and flowed 384 bbls. of oil in 24 hours through tubing. Shell Petroleum Corp. No. 2 State K, section 36-20-36; pay, 3,750-3,850 feet, total depth; flowed 142 bbls. of oil naturally in 24 hours through tubing, with 1,300,000 feet of gas. Gulf Oil Corp. No. 4 Orcutt C, C SE NW section 6-21-36; pay, 3,754-3,860 feet, total depth; acidized and flowed 600 bbls. of oil in 24 hours through tubing. Amerada Petroleum Corp. No. 4 Houston, C SW NE section 7-21-36; pay, 3,810-90 feet, total depth; flowed 710 bbls. of oil naturally in 24 hours through tubing choke.

Completions elsewhere in Lea County: Amon G. Carter No. 1 Elliott, C NW NW section 22-22-37; pay, 2,550-3,624 feet, total depth; shot and flowed 60 bbls. of oil through tubing in 24 hours; gas was estimated at 2,000,000 feet. Getty Oil Co. No. 2 Hardy, section 20-21-37, Hardy pool; pay, 3,690-3,800 feet, total depth; acidized and shot; flowed 42 bbls. of oil in 24 hours through tubing. Texas Co. No. 1 Henderson, SE SE NE section 30-21-37; pay, 3,725-3,820 feet, total depth; set packer at 3,637 feet; acidized and shot; flowed 107 bbls. of oil in 24 hours through tubing. B. H. Cockburn and others No. 1 Mattern, C SW SE section 7-22-37, Hardy pool; pay, 3,643-3,746 feet, total depth; packer at 3,581 feet; acidized and shot; flowed 125 bbls. of fluid, 80 per cent sulfur water. Texas Co. No. 2 Sheppard A, C SW NW section 6-26-37, Jal sand area; pay, 3,041-3,077 feet; total depth, 3,150 feet; plugged back to 3,077 feet; packer at 3,041 feet; perforated casing below packer; acidized, and flowed 23 bbls. of oil and 292 bbls. of water in 19 hours through tubing.

In Eddy County, Tignor, Etz & Keys No. 5 Keys A, CEL SW SW section 10-17-28, was dry and abandoned at 1,982 feet, total depth. Slight showings of oil and gas were found at 715 feet, 1,720-21 feet and 1,778-79 feet.

Monument Area

Skelly Oil Co. No. 2 State F, C SW SE sec. 17-20-37. Cellar and pits.
Continental Oil Co. No. 1 Sanderson B, C E half NE NE sec. 10-20-36. T.D. 3,900 ft.; flowed 19 B.O. in 7 hrs.; to set packer.
Gulf Oil Corp. No. 1 Graham-State G, C SW SE sec. 17-19-37. T.D. 3,995 ft.; flowed 88 bbls. fluid in 24 hrs.
Continental Oil Co. No. 1 Britt B, C NE NW sec. 8-20-37. Drlg. 3,200 ft.
Ennisbrook Oil Co. No. 1 Wulff, NW cor. sec. 17-20-37. T.D. 3,760 ft.; set 7-in. csg.
Phillips Pet. Corp. No. 1 Patsy, C NW NE sec. 18-20-37. T.D. 1,340 ft.; set 9⅝-in. csg.
Humble O. & R. Co. No. 2 Laughlin, C SW SW sec. 4-20-37. T.D. 3,105 ft.; fishing.
Gulf Oil Corp. No. 2 Kutter A, C NW SE sec. 20-19-37. T.D. 4,002 ft.; flowed 19 bbls. oil; may shoot.
Amerada Pet. Corp. No. 1 Larsen, C SE SW sec. 32-19-37. Drlg. 3,535 ft.
Stanolind O. & G. Co. No. 2 Gillully, C NW NE sec. 21-20-37. Drlg. 3,448 ft.
Amerada Pet. Corp. No. 1 Byrd, C NW NE sec. 12-20-36. Drlg. 3,065 ft.
Amerada Pet. Corp. No. 2 Byrd, C SW NE sec. 12-20-36. Drlg. 2,759 ft.
Barnsdall Oil Co. No. 6 Cooper, sec. 7-20-37. Drlg. 2,610 ft.
Empire O. & R. Co. No. 4 Laughlin, sec. 8-20-37. Drlg. 2,730 ft.
Ohio Oil Co. No. 8 Barber, sec. 5-20-37. Drlg. 2,260 ft.
Ohio Oil Co. No. 1 Laughlin, sec. 9-20-37. T.D. 408 ft.; S.D. for repairs.
Amerada Pet. Corp. No. 2 Larsen, C NE NW sec. 32-19-37. Drlg. 2,601 ft.
Amerada Pet. Corp. No. 1 Love, C NW SE sec. 32-19-37. Rig up.
Amerada Pet. Corp. No. 2 Anderson, C SE SW sec. 8-20-37. Rigging up rotary.
Amerada Pet. Corp. No. 2 Phillips, C NE SW sec. 33-19-37. Rig.
Amerada Pet. Corp. No. 1-W State, C SE NE sec. 30-20-37. Drlg. 940 ft.
Amerada Pet. Corp. No. 2-W State, C SW NE sec. 30-20-37. Rigging up rotary.
Continental Oil Co. No. 1-B-18 Britt, C NW NW sec. 18-20-37. T.D. 1,040 ft.; set 7⅝-in. csg.
Gulf Oil Corp. No. 2 Anderson, C NE NW sec. 17-20-37. Location.
Gulf Oil Corp. No. 2-F Graham-State, NE NE sec. 36-19-36. T.D. 293 ft.; set 10¾-in. csg.
Gulf Oil Corp. No. 3-B Kutter-State, C NW NW sec. 28-19-37. T.D. 351 ft.; set 15½-in. csg.
Gulf Oil Corp. No. 4 Mathews, C NE SE sec. 6-20-37. T.D. 300 ft.; set 10¾-in. csg.
Gulf Oil Corp. No. 3 Sunshine, C NE SW sec. 30-20-37. Rig.
Gulf Oil Corp. No. 1-B Weir, C NW SE sec. 26-19-36. Location.
Gulf Oil Corp. No. 2 Whitmire, C NW NE sec. 8-20-37. T.D. 258 ft.; set 13¾-in. csg.
Humble O. & R. Co. No. 2-D State, C NE NE sec. 20-19-37. Drlg. 1,110 ft.
Humble O. & R. Co. No. 9 State-Aggies, C SW NW sec. 31-20-37. T.D. 160 ft.; set sur. csg.
Oil Well Drlg. Co. No. 1 Wood-State, NW¼ sec. 16-20-37. Location.
Oil Well Drlg. Co. No. 2 Wood-State, NW sec. 16-20-37. Location.
Shell Pet. Corp. No. 4-B State, C SE NW sec. 36-19-36. Bldg. rig.
Tide Water Oil Co. No. 2-I State, C NE SW sec. 16-20-37. Location.
Continental Oil Co. No. 3-A-17 State, C NW SW sec. 17-19-37. Location.
Anderson-Prichard Oil Corp. No. 7 Britt, SE NW SE sec. 7-20-37. Cellar and pits.
Anderson-Prichard Oil Corp. No. 8 Britt, C SW SE sec. 7-20-37. Cellar and pits.
Tide Water Oil Co. No. 2 State I, C NE SW sec. 16-20-37. Cellar and pits.
Gulf Oil Corp. No. 2 Anderson, C NE NW sec. 17-20-37. Bldg. rig.
Gulf Oil Corp. No. 1 Weir B, C NW SE sec. 26-19-36. Bldg. rig.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; flowed 40 bbls. oil in 10 hrs.; testing.
Gulf Oil Corp. No. 2 Molly Campbell, C NE SW sec. 7-21-36. T.D. 3,900 ft.; est. 25,000,000 ft. gas.
Two States & Southern Pet. Ex. No. 1 McQuatters, C NW SE sec. 11-21-36. Rig.
Gulf Oil Corp. No. 1 J. H. Daly, NE NE SW sec. 6-22-36. T.D. 3,773 ft.; set 7-in. csg.
Atlantic Ref. Co. No. 1 State M, C NE SE sec. 36-20-36. T.D. 3,775 ft.; set 5½-in. csg.
Gulf Oil Corp. No. 2 Sunshine, C SE SW sec. 30-20-37 T.D. 3,840 ft.; to acidize.

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Empire O. & R. Co. No. 3 State F, C SE SE sec. 30-20-37. T.D. 3,838 ft.; testing.
Sun Oil Co. No. 5 Adkins, C SE SE sec. 3-21-36. Drlg. 3,780 ft.
Texas Pacific Coal & Oil Co. No. 3 State A, Acct. 2, C SW NE sec. 8-22-36. T.D. 3,566 ft.; testing.
Gulf Oil Corp. No. 4-C Bell-State, C SE NW sec. 15-21-36. Rigging up rotary.
Gulf Oil Corp. No. 3 Campbell, C NW SW sec. 7-21-36. Cellar and pits.
Gulf Oil Corp. No. 4 Collins, C NE SW sec. 14-21-36. Rigging up rotary.
Gulf Oil Corp. No. 4 Houston, C NW SE sec. 7-21-36. Bldg. derrick.
Gulf Oil Corp. No. 4-C Janda-State, C NE SW sec. 15-21-36. Rigging up rotary.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. Bldg. rig.
Gulf Oil Corp. No. 6 Orcutt C, C NE NW sec. 6-21-36. Drlg. 300 ft.
Bert Fields et al No. 1 Turner-State, SW SW NE sec. 32-20-37. Moving in.
Continental Oil Co. No. 18-B-4 Meyer, C NW NE sec. 4-21-36. Location.
Continental Oil Co. No. 4-D-11 State, C NE SW sec. 11-21-36. Location.
Texas Co. No. 3 Rector, NE NW SE sec. 30-21-36. Location.

Sims Area

Devonian Oil Co. No. 1 Christmas, NE NE SE sec. 18-22-37. T.D. 3,603 ft.; cleaning out after shot.
Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 1-23-37. Drlg. 3,387 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,305 ft.; waiting on tools.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. Drlg. 2,940 ft.
J. E. Farrell No. 1 Walden C, sec. 15-22-37. T.D. 3,588 ft.; fishing.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 3,537 ft.; W.O.C.
Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. T.D. 1,193 ft.; W.O.C.
Skelly Oil Co. No. 3 Baker, C NE NW sec. 27-22-37. T.D. 3,600 ft.; flowed 120 bbls. oil in 20 hrs.; shot and cleaning out.
Skelly Oil Co. No. 2 Ella Simms, C SW NE sec. 3-23-37. Loc.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-36. T.D. 3,514 ft.; S.D. for orders.
Yingling Oil Co. No. 1-B-3 Vaughan, C SE NW sec. 3-24-36. Drlg. 3,525 ft.
Yingling Oil Co. No. 1-B-9 Vaughan, NE cor. sec. 9-24-36. Drlg. 3,503 ft.
Shell Pet. Corp. No. 1 Guthrie, C SW SE sec. 34-23-36. Drlg. 3,778 ft.
El Paso Natural Gas Co. No. 1 G. W. Toby, C SE SE sec. 12-24-36. Drlg. 1,695 ft.

Lea County—Miscellaneous

Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Rigging up spudder.
C. L. Carlock et al No. 1 Quincy-Ricker, C SE SE sec. 7-16-36. Wildcat; drlg. 4,990 ft.
J. C. Clower No. 1 Turner, C SE SE sec. 29-21-37. Drlg. 3,672 ft.
Culberson-Irwin & Stovall No. 2 Stuart, NW SE NE sec. 20-25-27. T.D. 3,277 ft.; rigging up rotary.
Samedan Oil Co. No. 2 Hughes, C NW SE sec. 4-23-37. T.D. 3,625 ft; cleaning out.
Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-33. Wildcat; T.D. 3,160 ft.; cleaning out.
Baldridge et al No. 1 Blakely, C NW NE sec. 5-20-33. Wildcat; T.D. 3,885 ft.; S.D.
Rushwold Oil Co. No. 1 Carter, C NW NE sec. 30-20-33. Wildcat; drlg. 4,400 ft.
Maxwell, Crandall & Osmond No. 1 Lane-State, C SW NW sec. 32-10-34. Wildcat; drlg. 4,708 ft.
Texas Co. No. 1 Black, C SW NW sec. 21-24-37. T.D. 3,497 ft.; shot; flowed 443 B.O.; running tubing.
Magnolia Pet. Co. No. 3 Carson, C SW SW sec. 23-21-37. T.D. 3,775 ft.; C.O.
Tide Water Oil Co. No. 1 Coates B, C NW NW sec. 21-25-37. T.D. 3,077 ft.; testing shutoff.
Amon G. Carter No. 2 Elliott, C NE NW sec. 22-22-37. T.D. 3,385 ft.; set 7-in. csg.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. Drlg. 4,328 ft.
Empire O. & R. Co. and Repollo Oil Co. No. 1 Brunson, NW NW SE sec. 4-22-37. T.D. 3,600 ft.; bailing.
Anderson-Prichard Oil Corp. No. 2 Carlson, C SW NW sec. 21-25-37. T.D. 2,881 ft.; to shoot.
Shell Pet. Corp. No. 1 State T, C SE NE sec. 34-20-35. Wildcat; T.D. 4,195 ft.; S.D. for orders.
Getty Oil Co. No. 1 Etz, C NE NE sec. 12-21-32. Wildcat. Drlg. 1,302 ft.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. Cellar and pits.
Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. Drlg. 3,408 ft.
Maljamar Oil & Gas Co. No. 8 Baish, C SW NW sec. 21-17-32. Bldg. rig.
Mid-Continent Pet. Corp. No. 1 Greer, sec. 21-22-36. R.U.R.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. Drlg. 1,690 ft.
Stanolind O. & G. Co. No. 1 Myers, sec. 22-24-37. Bldg. rig.
Texas Co. No. 1 Alexander, sec. 5-21-37. Rigging up spudder.
Repollo Oil Co. No. 2 Boyd, sec. 23-22-37. T.D. 3,700 ft.; C.O.
Repollo Oil Co. No. 1 York, sec. 20-21-37. T.D. 3,850 ft.; C.O.
El Paso Natural Gas Co. No. 2 Harrison, C NW NW sec. 29-24-37. Drlg. 2,318 ft.
El Paso Natural Gas Co. No. 1 Harrison, C NW NW sec. 7-25-37. Drlg. 756 ft.
Continental Oil Co. No. 3-A-19 Eaves, C N half NW SW sec. 9-26-37. Drlg. 1,440 ft.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. Loc.
Tide Water Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Loc.
Clint Murchison et al No. 1 State A, C NE SW sec. 16-17-31. Drlg. 3,226 ft.
Continental Oil Co. No. 1 Skaggs Permit, C NE SE sec. 24-20-37. Wildcat; loc.
Tide Water Associated Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. Cellar and pits.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-37. Cellar, pits.
Texas Co. No. 3 Sheppard B, SW NE NE sec. 5-26-37. Rigging up rotary.

Eddy County

Barnsdall Oil Co. No. 4 Dodd, C SE SE sec. 22-17-29. T.D. 2,803 ft.; testing.
Fred Brainard No. 1 Berry, C E ½ NW NW sec. 23-17-27. T.D. 1,950 ft.; S.D.

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,252 ft.; swedging.
Hammond et al No. 1 State, SW SE SW sec. 15-27-28. T.D. 1,967 ft.; C.O.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. T.D. 1,310 ft.; set 7-in. casing.
Premier Pet. Co. No. 1 McIntyre G, NW NW NE sec. 21-17-30. Drlg. 3,112 ft.
Flynn, Welch & Yates No. 75 State, C E½ SE SE sec. 10-19-28. Drlg. 2,135 ft.
Flynn, Welch & Yates No. 3 Gissler, SW SE SW sec. 14-17-30. Drlg. 2,850 ft.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; machine.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. Loc.
Red Lakes Oil Co. No. 7 State, SE NW SW sec. 22-17-28. Moving in machine.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. Loc.
Neil H. Wills No. 1 Colglazier Permit, C NW NE sec. 20-20-30. Moving in machine.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Drlg. 1,401 ft.
Maxwell, Crandall & Osmond No. 1 Williamson, C NW NW sec. 7-8s-36e. Wildcat; drlg. 4,608 ft.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catts, C NW NW sec. 28-3n-30e. T.D. 4,290 ft.; S.D. for repairs.

Hobbs Field

Stanolind O. & G. Co. No. 30-X Capps, SE sec. 3-19-38. Loc.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. Spudded.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; drlg. at 1,577 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norrins Realty Co., Inc., No. 2 North Alburquerque, SE NW NW sec. 19-11n-4e. Drlg. 2,950 feet in hd. gray sd.

McKinley County

S. Dysart No. 1 Bouten, NW NE sec. 14-14n-10w. T.D. 1,490 ft.; cmtd. 12¾-in. 1,060 ft.

San Juan County

R. R. Burke No. 2 Govt., NW NW NE sec. 18-31n-13w. S.D. 297 ft.
Continental Oil Co. No. 34 Tribal, C SW SW section 2-29n-19w. Cmtd. 5-in. at 863 ft.
Angel Peak Oil Co. No. 7 Govt., Lot 2, sec. 11-28-11w. S.D. 1,160 ft.
Jack Amenda No. 4 Hart, NW NE SW sec. 25-30n-12w. Drlg. 1,540 ft.

COLORADO

Archuleta County

Drilling operations in Archuleta County are practically at a standstill on account of weather and road conditions. One well is preparing to resume. This is the Archuleta Oil & Gas Co. No. 1 Reeder, which reached the first sand in the Dakota series at 1,185 feet, total depth, several months ago. It had 800 feet of oil in the hole at last reports. The second or main Dakota sand is the principal pay in the Hughes Estate wells immediately to the east. The company has contracted with C. L. Shakespeare, E. C. Conrath and C. A. Sherman, of Alamosa, to complete No. 1 Reeder to the next sand and to drill another well.

Archuleta Oil & Gas Co. No. 1 Reeder, SW SE SW sec. 24-33n-2e. T.D. 1,185 ft.; prep. to resume.

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal Co., NW NW sec. 18-9n-78w. S.D. 2,700 ft.

Kiowa County

Gulf Oil Corp. No. 1 Riser-Union Pacific, C SW NE sec. 1-17n-50w. Drlg. 4,615 ft. in hard L.

LaPlata County

Detroit Oil Association No. 1, NW SW sec. 9-35n-12w. T.D. 3,397 ft.; tools rec.; W.O. drlg. line.

Las Animas County

Divided Oil & Refrs., Inc., No. 1, W½ sec. 12-33s-66w. Rpdg.
Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61. S.D. 1,045 ft. for 15½-in.

Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock, NE NE SW sec. 7-17-62. T.D. 2,096 ft.; drlg. up bailer.

Moffat County

Anderson-Kerr Drlg. Co. et al No. 1 Govt., C SE SE sec. 19-9n-99w. Ready to spud.
Mountain Fuel Supply Co. No. 1 J. C. Donnell, C SE NE sec. 31-12n-97. R.U.R.
Mountain Fuel Supply Co. No. 1 Stewart, C SW SW sec. 31-12n-97w. Drlg. 2,485 ft.
Mountain Fuel Supply Co. No. 1 Kuykendall, NE NE SE sec. 22-12n-100. T.D. 2,790 ft.; P.B. to 2,537 ft.; cmtd. 4½-in. at 2,495 ft.; S.D. for winter.

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. Resumed; T.D. 1,718 ft.; C.O. to test S.O.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 3,520 ft.; 10¾-in. at 3,500 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-76w. Drlg. 5,700 ft.; 10¾-in. at 5,690 ft.

Pueblo County

The Phillips Petroleum Co. No. 1 Andover-Century, NE SW NW section 26-18s-65w, in the Henkel district, a wildcat, was plugged and abandoned at 2,203 feet. It stopped in what the drillers class as the equivalent of the Sundance. It had the Nio-Benton sand at 992-1,025 feet and first Dakota at 1,432-50 feet. No shows were encountered. Elevation 5,236 feet.

WYOMING

Secretary of the Interior Harold L. Ickes has announced the execution of a contract for the sale of the government's royalty oil from the Salt Creek field for a period of three years to begin January 1, 1937, to the Sinclair-Wyoming Oil Co. for a premium of 2½ cents per barrel above the highest posted field price for crude of like gravity. Bids were received November 2, last. The bonus was higher than the contract for the past two years to the Sinclair-Wyoming company and the Socony-Vacuum Oil Co., Inc., which was 2 cents per barrel. Secretary Ickes' explanation of making the contract run for three years was that "It may reasonably be anticipated that stabilized conditions in the petroleum industry at the close of 1939 and the reduction of supplies now held in storage by private parties will enable the government to dispose of its royalty oil at a higher price after January 1, 1940."

Albany County

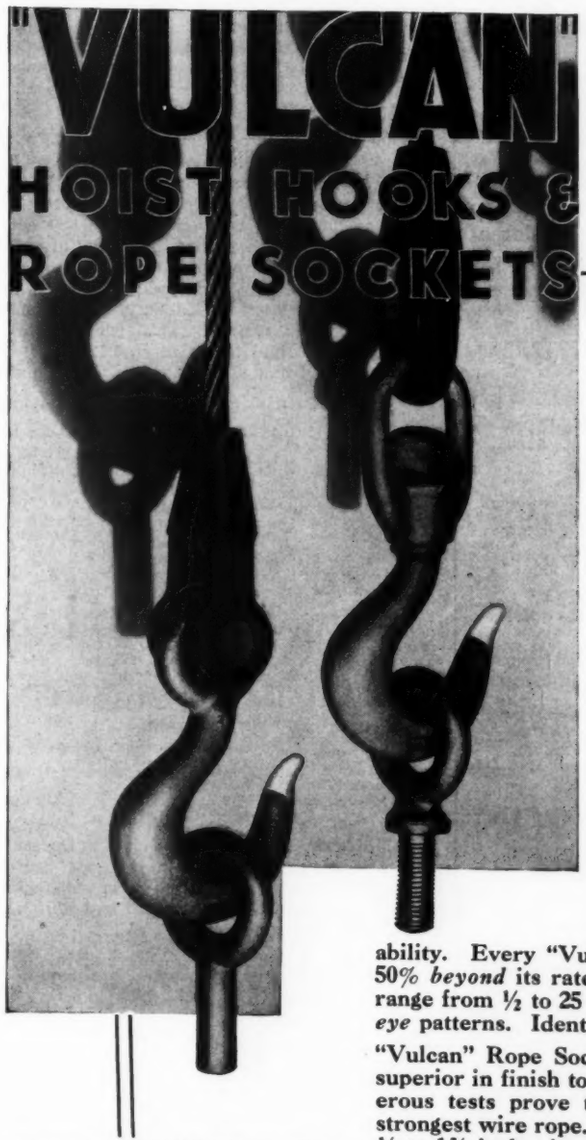
Murphy Oil Co. No. 5 Holst, SE NE SE sec. 13-17n-77. Drlg. 3,563 ft.; headed for the Sundance.
Hal Blakeman No. 1 Chapple, C NE NW sec. 31-21-76. S.D. 1,680 ft.
Murphy Oil Co. No. 6 Holst, NW NE SE sec. 13-17n-77. R.U.R.

Big Horn County

The Ohio Oil Co. No. 2 Smith, CWL NW SE section 32-56-97, Garland field, reported a completion last week flowed 380 bbls. per day initially from the Madison lime at 4,070-4,201 feet.

The Stock Oil Co. No. 1 Allen, which has been out of control for a year, now has the fire confined to the casing. The burning craters have been extinguished by shooting. Water is being pumped through the formations from a relief well and this is causing the formations to cave and decrease the gas flow.

Stock Oil Co. No. 1 Allen, Lot 52, sec. 32-46n-97. T.D. 3,825 ft.; wtr. from No. 1-B Allen has extinguished fires from craters; well still burning.
Stock Oil Co. No. 1-B Allen, Lot 52, sec. 32-46n-97. T.D. 3,800 ft.; pmpg. wtr. into No. 1 Allen.
Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-46n-97. Drlg. 4,300 ft.



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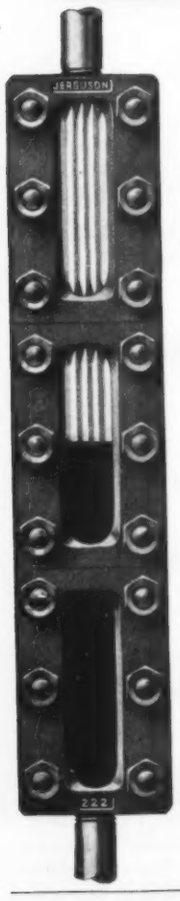

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Taylor Oil Co. No. 1 Robinson, SW SW NW sec. 34-56n-97. S.D. 3,030 ft.
Peay Oil Co. No. 1 Denjo Hr., 43-C, sec. 15-55n-87w. S.D. 3,930 ft.; C.O.
Peter Evanoff et al No. 1 McAllester, NW NE SE sec. 9-55n-87. S.D. 3,015 ft.; will run 8⅝-in. and go to Madison.
J. W. Bales No. 1 Parker, C SW SW sec. 23-49n-89w. Drlg. 1,010 ft.

Carbon County

The Sinclair-Wyoming Oil Co. No. 10 Government, SW SE NW section 7-26n-89w, the oil discovery well in the Tensleep, has been completed at 5,883 feet. It was planned to kill the well and drill a few feet deeper, but this could not be done. It is being allowed to clean itself for a period of five days and then will be shut in. It is averaging 75 bbls. per hour.

Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. R.U.R.
Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. R.U.R.
Ohio Oil Co. No. 7 H.&C., C NW sec. 2-19-78. Drlg. 4,610 ft. in r.b.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 19-83w. P.B. from 5,557 ft. to 3,050 ft. with 8⅝-in. set at 2,900 ft. to test oil showings in sh.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW SW sec. 16-32n-69w. S.D. 3,050 ft.; many install rotary.
Wyoming Southern Oil Co. No. 2 Salisbury, NE NW SE sec. 27-32n-69w. Drlg. 336 ft.

Campbell County

C. J. Shearin et al No. 1 Rhodes, NE SE SW sec. 21-49n-74. S.D. 191 ft.

Fremont County

Considerable interest has been aroused in the action of the superintendent of Shoshone Indian agency at Fort Waskakie in calling for bids on January 25 for leases on Tribal and Allotted land in the agency. The tracts comprise 3,880 acres. They start close to the top of the Pilot Butte field and run to the northwest. Included are two tracts of 80 acres each in W half section 22-3n-1w and the remainder in sections 4, 5, 8, 9, 10, 15 and 16-3n-1w. Minimum rental is $1.25 per acre to be credited to the stipulated royalty of 12½ per cent on allotted land and $1 per acre on tribal land.

C. E. Nelson No. 2 Enos, SW NE SW sec. 27-2n-1w. Drlg. 1,012 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w Drlg. 3,155 ft.; 4½-in. at 3,145 ft.
Sinclair-Wyoming Oil Co. No. 2-C Muskrat, NE SW SW sec. 1-32n-92w. T.D. 7,293 ft.; S.D. for winter with H.F. oil.

Goshen County

Ohio Oil Co. No. 1 Red Cloud Cattle Co., NW NE NW sec. 28-29n-62w. Spdg.

Laramie County

Amerada Pet. Corp. No. 1 Morton, C SW SW sec. 13-13n-68. Drlg. 8,525 ft.; sdy. sh. streaked with hd. shells.

Lincoln County

H. M. Eilers et al No. 5 Govt., NE SE SW sec. 32-19n-116w. Drlg. 490 ft.
Place Oil Co. No. 1 Davis per., SE cor. sec. 9-26n-113. Drlg. 600 ft.; slight S.O.&G. at 480 ft.
Senrab Oil Co. No. 3 Govt., CSL SE NW sec. 10-36n-113w. S.D. 1,020 ft.

Natrona County

Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78. Drlg. 631 ft.
Summit Oil Co. No. 1 Trevett, NW cor. sec. 21-33n-80w. Resumed; drlg. 1,850 ft.; 6⅝-in. at 1,835 ft.

Niobrara County

J. M. Huber Corp. No. 2 Joss, close to the southwestern edge, swabbed mud, water and a little oil at 3,982 feet, but the test was not satisfactory and it was deepened 3,999 feet and is again swabbing through the tubing to test.

J. M. Huber Corp. No. 1 Midwest, SE SE SW sec. 27-36n-65w. Dismantling old equipment and prep. to install rotary to deepen from 3,540 ft. to the Sundance.
Argo Oil Co. No. 3 Ford, SW SW NW sec. 33-36n-65w. Cg. in top 1st Sundance at 3,794 ft.
Bay-Elwell No. 1 Joss, C SE SE NW sec. 1-34n-66w, S.D.O. 2,324 ft. Hole full of water.
Continental Oil Co. No. 5-A Schuricht, C NW SW sec 5-35n-65w. Drlg. 3,153 ft. in sh.
Holly Dev. Co. No. 1 Novick, NE SE SW sec. 6-35n-65. T.D. 3,578 ft.; drlg. 3,300 ft. 15 ft. below whipstock.
Lewin Gokel No. 1, NE SE NW sec. 31-35n-62w. Drlg. 970 ft.
J. M. Huber Corp. No. 2 Jose, NE NE SW sec. 6-35n-65. T.D. 3,999 ft.; testing.
Ohio Oil Co. No. 5 Leo OPC-16, NW NW SW sec. 25-36n-65w. Rig.
Ohio Oil Co. No. 7 Putnam, NE NE SW sec. 33-36n-65w. Drlg. rat hole.
Ohio Oil Co. No. 9 Lamb, C SE NW sec. 5-35n-65w. Drlg. 3,885 ft.; top 1st Sundance 3,835 ft.
Riggs Oil Co. No. 2 Spaugh, SE SW SW sec. 32-34n-65w. S.D. 1,092 ft. for winter.
Chester Oil Co. No. 1 fee, NE NE NE sec. 14-39n-61. Drlg. 1,011 ft.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. T.D. 5,684 ft.; to set 9⅝-in. at 5,660 ft.; top Embar 5,601 ft.; S.O.&G.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. Drlg. 2,485 ft.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55-85. S.D. 3,200 ft.

Washakie County

Wood-Callahan Oil Co., Ltd., No. 1 Keye, NE NE NW sec. 25-48n-91w. T.D. 1,831 ft.; S.O.; rng. 8¼-in.

Weston County

Conway Oil Corp. No. 2 Govt., SE SE NW sec. 7-41n-60w. Drlg. 200 ft.

MONTANA

Big Horn County

A completion, and also a first report, was Ursulla Zelka No. 1 fee, SE NW SE sec. 21-1s-33e, in the town of Hardin, for 40,000 feet of gas a day at 692 feet. Residents of the town have been drilling shallow wells at intervals for several years and piping the gas into their houses for domestic purposes. The Daniels Petroleum Co. is drilling a deep test which is reported to have a show of oil in the top of the Tensleep at 3,840 feet. A string of 3-inch has been cemented at 3,791 feet and plug is being drilled with 2½-inch bit to test.

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. T.D. 3,840 ft.; prep. to test.

Cascade County

C. Leonard Smith No. 1-A Smith-Schwingle, NE NE SW sec. 14-22n-2e. S.D. 620 (C.D.) ft. in top of Dakota for winter.

Carbon County

East Bridge O. & G. Co. No. 1, CSL SE SE sec. 23-6s-23e. S.D. 1,477 ft.; rng. 8¼-in. to bottom; Dakota at 1,428-32 ft.; dry.
Ohio Oil Co. No. 1 Northern Pacific, SE NE SW sec. 11-7s-21. T.D. 5,772 ft.; trying to S.O. bottom wtr. in Lakota at 5,542-72 ft.
Miracle Oil Co. No. 2 Blue Creek, CWL NE NE sec. 3-6s-23e. Drlg. 1,260 ft.; prep. to run 8¼-in.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. S.D. 810 ft.; weather.

Fallon County

Montana-Dakota Utilities No. 2 Warren No. 1 Unit 5, C SW sec. 23-8n-59e. Drlg. 6,400 ft.
Montana-Dakota Utilities Co. No. 3 Smith No. 1 Unit 4, C SE NW sec. 8-4n-62e. T.D. 6,765 ft.; prep. to test.

Fergus County

Judith Op. Co. No. 2 Govt., CWL NW NE sec. 35-22n-17e. S.D. 3,180 ft.
Emmons et al No. 4 Govt., SW cor. sec. 3-21n-18e. S.D. 432 ft. for winter.
Emmons et al No. 5 Govt., SW cor. sec. 24-22n-18e. Drlg. 320 ft.; (first report).
O. B. Canfield No. 1 Govt., CEL SE NE sec. 21-17n-24e. Drlg. 532 ft. Colo. sh.; (first report).

Glacier County

Three wells were completed in Cut Bank and only four drilling wells showed any progress during the week.

A. E. Wilkinson No. 2 All.-111, C SW SW section 31-33n-5w, swabbed 180 bbls. first 24 hours at a total depth of 3,016 feet. It had the pay at 2,997-3,014 feet.

A. E. Wilkinson No. 2 Tribal-126, NW NW NW section 7-32n-5w, swabbed 127 bbls. first 24 hours at a total depth of 2,901 feet. The pay was at 2,885-2,900 feet and the elevation is 3,614 feet.

The Glacier Production Co. No. 1 Federal Land Bank (formerly Montana Power) C SW SW section 30-34n-5w, had 1,200 feet of oil in the hole at 2,872 feet from the pay at 2,845-68 feet, but has not tested.

Glacier Prod. Co. No. 1 Williams, C SW SE sec. 21-33n-5w. Spd. 1-7-37.
Wm. Hanlon, Agt., No. 1 All.-127, C SE NE sec. 12-32n-6w. Cmtd. 7-in. at 2,950 ft.; W.O.C.
Hannah-Porter Co. No. 2 All.-130, C NE SW sec. 6-32n-5w. S.D. 2,360 ft.
Montana-Dakota Oil Co. No. 1 Tribal 136, S NE NE sec. 15-34n-6w. Drlg. 1,975 ft.
Vera Johnson No. 1 Tribal-118, C SW SW sec. 1-32n-6w. S.D. 2,900 ft. for 8¼-in.
Dan Whetstone No. 2 Tribal-117, C NE SW sec. 36-33n-6w. Drlg. 2,715 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,352 ft. in Kootenai.

Liberty County

Western Natural Gas Co. No. 3 Wallace, NW NW SW sec. 15-37n-4e. Fished out tools; drlg. 1,900 ft.

Park County

Ben W. Ryan, et al. No. 1 Burgess, SE SW NW sec. 28-2s-11e. Drlg. 606 ft.

Petroleum County

H. C. Rowland No. 1 Kalispel, NE NE SE sec. 35-14n-25e. Drlg. 665 ft.

Phillips County

R. G. Parrant No. 1 Hartmen, C NW SE sec. 12-24n-25e. Drlg. 715 ft. in Eagle sd.

Pondera County

Clinch Pet., Ltd., No. 1 Holan, NW SW NW sec. 12-29n-6w. T.D. 2,200 ft.; cleaned up fshg. job. and S.D.
K. P. Hardee No. 1 Hughes, NW NE NW sec. 13-30n-4w. S.D. 2,497 ft.
Kirk Oil Co. No. 1 Kellogg, SE NW NE sec. 31-28n-4w. S.D. 2,130 ft.

Sheridan County

Cheyenne O. & G. Co. No. 1 Olson, SE SE SE sec. 14-

(Continued on Page 78)

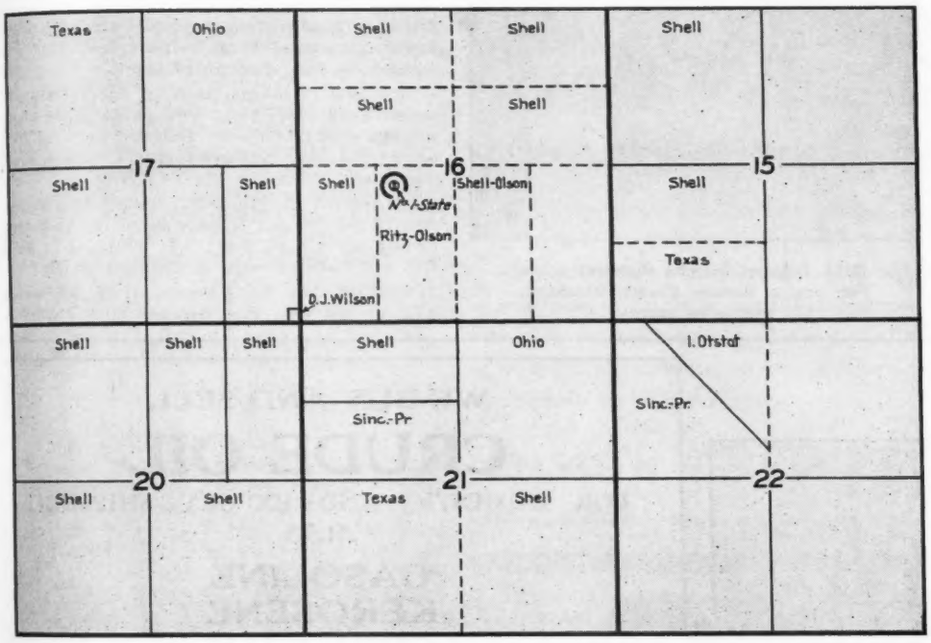
Oklahoma Operations

By
DAL DALRYMPLE

WESTERN LINCOLN WILDCAT MAY OPEN NEW OIL SECTOR

Although inclement weather retarded field activity in Oklahoma somewhat the past week, two wildcats were nearing completion as probable producers, the Cement area of Caddo County was pushed north by producers, activity in the Okfuskee County sector of the Olympic pool was extended north and several new wells were completed in the Fitts field, Pontotoc County. There also was considerable activity in shallow areas of northeastern Oklahoma, in the vicinity of Tulsa, Claremore and Coweta, especially.

Summitt Drilling Co. and others No. 1 Eakers NE NE SW section 35-15-2e, wildcat north of Wellston and east of Fallis in Lincoln County, swabbed 100 bbls. of oil in 17 hours and made two head flows into the pits. Production was thought to be from Wilcox sand, topped at 5,129 feet; total depth, 5,140 feet. Dolomite was topped at 5,111 feet. Operators were preparing to acidize.



A new Wilcox sand test of more than ordinary interest in Oklahoma is the Ritz Oil & Gas Co. and Olson Oil Co. No. 1 State, NW NE SW section 16-29-2w, northwestern Kay County, about one-half mile south of the Kansas line.—(Mid-Continent Map Co., Tulsa)

Continental Oil Co. No. 1 King, NE SW NE section 26-1n-8e, wildcat southeast of Jesse but in Coal County, was nearing completion as a shallow pumper. It drilled into water at 5,764 feet, and plugged back to a sand where it showed for 50 bbls. of oil daily by heads.

Wasketa Oil Co. No. 2 Belton, NW NW SE section 26-6-10w, on the northwest rim of the Cement field, Caddo County, was bottomed at 5,366 feet. Casing was ripped to test sand at 5,080-5,170 feet, and it produced 50,000,000 feet of wet gas. A second sand at 5,235-5,310 feet was to be tested. Same operator's No. 1 Melton, SW SW SE section 26-6-10w, which originally was completed as a 13,000,000-foot gasser at 5,169 feet, after plugging back from deeper sands, has been averaging 25 bbls. of 50-gravity oil daily in recent weeks.

The deep Stephens County wildcat, Ed Parsons and others No. 1 Olson, C SW SW section 21-2n-8w, was being abandoned at 7,002 feet, total depth. Location has been proposed for another deep test in NW NW section 8-1n-8w.

An oil and gas lease sale will be held at the Five Civilized Tribes agency in Muskogee January 28. Acreage to be offered in eastern and southern Oklahoma counties. Sealed bids were received on 50,482 acres of Indian lands in Caddo, Comanche, Stephens and Grady counties at the Kiowa agency in Anadarko, January 20. Ten tracts of Indian lands in Noble County have been offered for sale to sealed bidders, bids to be opened at the Pawnee agency in Pawnee, January 29. The next Osage sale has been set for March 10, at Pawhuska.

Pontotoc County

Six new oil wells were completed in the Fitts field, Pontotoc County, one well was temporarily abandoned and two old wells were recompleted.

Largest of the completions was Skelly Oil Co. No. 17 Park College, SE SW NE section 28-2n-7. It topped Hunton lime, producing formation, at 3,242 feet; Sylvan shale, 3,503 feet, and was bottomed at 3,505 feet. After acidizing with 10,000 gallons, it made potential of 5,526 bbls. of oil, with 3,500,000 feet of gas.

E. H. Moore and others No. 1-A Burris, SE NW SE section 22-2-7, topped Hunton lime at 3,613 feet; Sylvan shale, 4,010 feet; total depth, 4,014 feet. It flowed 219 bbls. of oil in two hours through tubing; was treated with 5,000 and 10,000 gallons of acid and made potential of 3,264 bbls. of oil.

Sinclair Prairie Oil Co. No. 9 Woolley B, SW SE SW section 22-2-7, flowed 903 bbls. of oil in two hours through tubing and casing after acidizing with 10,000 gallons, and made potential of 4,741 bbls. of oil. Top of Hunton lime was 3,476 feet; total depth, 3,580 feet. Same operator's No. 10 Woolley B. NE SE SW section 22-2-7, made potential of 3,006 bbls. of oil at total depth of 4,390 feet. Production was from Bromide, topped at 4,310 feet; first sand, 4,370 feet.

J. Paul Getty No. 1 Masters, NW NE SW section 23-2-7, was completed as a Hunton lime producer at 4,075 feet, total depth. It flowed 922 bbls. of oil in one hour, net, and made potential of 6,276 bbls. Top of Hunton lime was 3,698 feet; Sylvan shale, 4,070 feet.

Shell Petroleum Corp. No. 1 Bates, SE NE NW section 26-2-7, topped Hunton lime at 4,090 feet, was bottomed at 4,455 feet, and when Schlumberger test showed water in top and bottom of the Hunton, with gas in the Atoka, it was temporarily abandoned.

Magnolia Petroleum Co. No. 27 Metropolitan Life, NE NW NE section 27-2-7, topped Hunton lime at 3,391 feet; Sylvan shale, 3,769 feet; total depth, 3,771 feet. After treatment with 10,000 gallons of acid, it flowed 591 bbls. of oil in one hour through casing and made potential of 4,296 bbls.

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending January 16, and for the preceding week, was as follows:

	Barrels	
	Jan. 16	Jan. 9
Allen	7,075	7,125
Burbank	7,500	7,500
South Burbank	15,000	14,800
Balance Osage	21,300	21,250
Blackwell district	4,950	5,025
Bristow-Slick	7,825	7,800
Chandler	3,500	3,525
Crescent	11,150	7,950
Cromwell	3,350	3,325
Cushing-Shamrock	10,225	10,300
Duncan district	3,900	3,950
Edmond	17,225	15,150
Fish	7,325	7,275
Fitts	72,575	69,250
Gray	1,350	1,425
Graham	4,750	4,800
Healdton	9,450	9,475
Hewitt	4,350	4,375
Holdenville	950	950
Keokuk	5,875	7,400
Konawa	1,700	1,725
Lucien	13,900	12,750
Marshall-Lovell	725	750
Oklahoma City	162,200	135,650
Olympic	13,350	12,275
Papoose	875	875
Polo	1,975	2,000
Sasakwa and townsite	2,925	3,025
Sholem-Alechem	3,200	3,250
Seminole:		
Bowlegs	11,225	10,725
Carr City	6,250	6,425
Earlsboro	6,225	6,150
South Earlsboro	750	750
East Earlsboro	8,150	8,450
Little River	11,300	11,000
East Little River	1,125	1,250
Maud	775	775
Mission	2,275	2,100
Seminole	10,175	8,825
East Seminole	4,225	4,125
Searight	4,525	4,825
Total Seminole	67,000	65,400
St. Louis-Pearson	22,025	22,300
Tatums	3,800	3,750
Tonkawa-Garber-Thomas	5,600	5,550
Wewoka	3,600	3,650
Yale-Jennings	4,025	4,100
Other pools	72,125	70,425
Total Oklahoma	598,650	560,125

Old Wells Reworked

E. H. Moore and others No. 1 Deaner, NW SW SE section 23-2-7, an old well, was plugged back from 4,430 feet to 4,126 feet, made potential of 2,404 bbls. of oil from Hunton lime, and was recompleted. Same operator's No. 1 Benton, NW NE NW section 32-2-7, an old well, was plugged back from 4,025 feet and then deepened, topping Wilcox sand at 4,340 feet; Oil Creek sand, 4,581

feet; Arbuckle, 4,970 feet; total depth, 5,039 feet. It was plugged back to 4,296 feet, shot, flowed an average of 46 bbls. of oil an hour for 10 hours, with 77 per cent mud; later flowed 19 bbls. of oil an hour for 24 hours, with 25 per cent basic sediment and mud, and was recompleted for old potential. Gas gauged 7,000,000 feet.

New work in Pontotoc County: Sinclair Prairie Oil Co. No. 2 Snow, NE SW SW section 28-5-8, location; Kilbourne No. 1 Factor, NW SW SE section 25-5-7, machine; E. H. Moore and others No. 3 Akers, NE SW NE section 36-2n-6, old well plugging back from 4,497 feet to 4,440 feet, to pump; Sinclair Prairie Oil Co. No. 1 Woolley, NE SE SW section 22-2n-7, cellar; Skelly Oil Co. No. 8 Metropolitan Life, NW SE SW section 23-2-7, cellar; same company's No. 9 Metropolitan Life, NE SE SW section 23-2-7, cellar; their No. 10 Metropolitan Life, SE NE SW section 23-2-7, cellar; same company's No. 18 Park College, SW SW NE section 28-2-7, cellar; E. H. Moore and others No. 4 Mobley, SE NW NE section 32-2-7, cellar; L. K. Sandback and others No. 1 Whittaker, NW NE SE section 31-4-6, wildcat, location for a Wilcox sand test.

Near Completions

Potential for Aikman, Continental Oil Co. and others No. 1 Thompson, SW NW SE section 2-1n-7, was estimated at 3,420 bbls., after it flowed 700 bbls. of oil in five hours while running tubing. It was bottomed at 4,541 feet, but was not completed. Continental Oil Co. No. 4 McCarty, SE NE NW section 12-1n-7, flowed 62 bbls. of oil net in four hours through casing, while running tubing; total depth, 4,658 feet.

Amerada Petroleum Corp. No. 4 Woolley, NE SE SE section 21-2n-7, topped Hunton lime at 3,514 feet; Sylvan shale, 3,859 feet; total depth, 3,863 feet, flowed 34 bbls. of oil in 11 hours and was to acidize. Stahl Brothers No. 8 Dennis, NW SW SW section 21-2n-7, flowed 1,250 bbls. of oil gross in nine hours through tubing and casing, after acid treatment with 15,000 gallons. It topped Viola lime at 4,060 feet; total depth, 4,370 feet. Magnolia Petroleum Co. No. 29 Metropolitan Life, C N half SW SE section 22-2n-7, topped Hunton lime at 3,510 feet; Sylvan, 3,910 feet; total depth, 3,916 feet; acidized with 10,000 gallons and flowed 490 bbls. of oil gross through casing in one hour. E. H. Moore and others No. 5-A Moody, SE NE SE section 22-2n-7, was waiting on results after treating with 5,000 gallons of acid at 3,983 feet, total depth. Before acidizing, it flowed as high as 295 bbls. of oil in one hour through casing. Skelly

W. A. Delaney, Jr., who pioneered in the Fitts pool in Pontotoc County, Oklahoma, with great success

Oil Co. No. 1 Ingram, NW NW SW section 23-2n-7, was bottomed at 4,088 feet, acidized with 10,000 gallons and flowed 375 bbls. of oil in two hours through tubing. Top of Hunton lime was 3,672 feet; Sylvan shale, 4,080 feet.

Skelly Oil Co. No. 5 Metropolitan Life, SW NE SW section 23-2-7, topped Hunton lime at 3,606 feet; total depth, 4,007 feet; flowed 890 bbls. of oil in eight hours through tubing; acidized with 10,000 gallons and flowed 360 bbls. of oil in two hours and 30 minutes through tubing. Simpson & Fell No. 5-A Westheimer, NW SW NW section 26-2n-7, flowed 252 bbls. of oil gross in one hour through tubing after treatment with 13,000 gallons of acid. It was bottomed at 3,658 feet.

Seminole County

Amerada Petroleum Corp. and others No. 1 Pryor, NW NE NW section 36-10-7, North Bethel area, Seminole County, was bottomed at 3,642 feet, flowed 668 bbls. of oil in eight hours through casing and tubing, and made potential of 2,140 bbls. of oil. Gas gauged 1,188,000 feet. Production was from Cromwell sand, topped at 3,626 feet.

Three other new oil wells were completed in Seminole County, and three old wells were recompleted.

Vierson No. 6 Jones A, NW SW NW section 11-6-6, topped sands at 2,403 feet and 2,416 feet; drilled to 2,436 feet, total depth, where salt water intruded; plugged back to 2,425 feet, shot and pumped 15 bbls. of oil in 24 hours.

Magnolia Petroleum Co. No. 2 fee, SE SW SW section 9-9-7, flowed 314 bbls. of oil in 48 hours through casing and was completed at 3,465 feet, total depth. Production was from Cromwell sand, topped at 3,448 feet.

Carter Oil Co. No. 2 F. Block, NW cor. section 23-10-6, topped Misener sand, the producing formation, at 4,257 feet; was bottomed at 4,269 feet and made potential of 195 bbls. of oil.

Gulf Oil Corp. No. 7 Payne, SE SE NE section 5-7-7, an old well, was deepened from 3,219 feet

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to 3,298 feet, pumped 65 bbls. of oil and 80 bbls. of water in 24 hours and was recompleted.

M. Van Deventer No. 1-B Bendon, NE NE SW section 3-8-8, an old well, was deepened from 3,375 feet; mudded off gas; had a new gas show at 3,417 feet, and was recompleted at 3,421 feet, total depth, producing 10,000,000 feet of gas.

Texas Co. No. 1 Mayhue, SE SW NE section 14-9-6, an old well, flowed 45 bbls. of oil net in 24 hours after plugging back from 4,269 feet to 4,186 feet, shooting and acidizing; recompleted.

First reports of new work in Seminole County follow: Amerada Petroleum Corp. and others No. 1 Yahola, NE NW NW section 36-10-7, old well, building rig to deepen; C. J. Wrightsman No. 3 May, NE SW SW section 25-10-7, moving in tools; Amerada Petroleum Corp. and others No. 1 L. B. Smith, NE SW SW section 3-10-5, cellar; Magnolia Petroleum Co. No. 3 fee, NE SW SW section 9-9-7, location; Sinclair Prairie Oil Co. No. 3 L. Patton, NE SW NE section 18-6-8, cellar; same operator's No. 7 Hyde, NW SW NW section 2-8-5, moving in rig; same operator's No. 4 Hassman, SE NE NE section 3-8-5, cellar; Paul Traugh No. 1 Scroggin, NE NE SE section 22-6-6, location; W. B. Pine No. 1 Williams, SE NE NE section 26-6-6, location.

Oklahoma County

Blackstock Oil Co. No. 3 Tegtmyer, NW NE SE section 36-14-4w, Edmond field, Oklahoma County, was completed as a Simpson producer at 6,600 feet, total depth. It was acidized with 10,000 gallons, and flowed 790 bbls. of oil in four hours, making potential of 4,740 bbls. Gas was estimated at 4,000,000 feet.

Following are new operations in Oklahoma County: Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 2 State, NE SE SW section 16-10-2w, location; Phillips Petroleum Co. and Anderson-Prichard Oil Corp. No. 1 Oklahoma, SW SE SE section 16-10-2w, location; Continental Oil Co. No. 16 Young, NW SW NW section 31-14-3w, location; same operator's No. 15 Young, SW NW NW section 31-14-3w, digging cellar and pits; Transwestern Oil Co. No. 6 Suneram, NE SW NE section 6-13-3w, digging cellar and pits; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 5 Suneram, NW SE NE section 6-13-3w, moving in tools; Anderson-Kerr Oil Corp. No. 1 Dawson, SE NW SE section 27-12-3w, building rig.

Noble County

Balliere & Lindsay and others No. 1 Aetna Life, SE SE NW section 1-23-2w, wildcat in Noble County, topped second Wilcox sand at 4,658 feet; total depth, 4,622 feet in sand, the last 18 inches showed salt water and no oil, and it was dry and abandoned. Tops follow: Oread, 2,460 feet; sand, 2,840 feet; Layton, 3,437 feet, with a good showing of oil at 3,452 feet; lower Layton, 3,550 feet, showing oil and gas; Oswego, 3,950 feet; Prue, 4,246 feet, slight showing of gas; Mississippi, 4,380 feet; Woodford, 4,540 feet; first Wilcox sand, 4,612-4,633 feet.

Pottawatomie County

The only completion in Pottawatomie County the past week was Ohio Oil Co. No. 1 Weldfelt, SW SE NW section 34-8-4. Water intruded at 4,256-64 feet, total depth, and it was plugged back and completed at 4,214 feet. It was acidized with 3,000 gallons and pumped 7 bbls. of oil in 24 hours. Top of Viola lime, the producing formation, was 4,129 feet.

Work was started at one new Pottawatomie County test. It was McCann No. 1 Gillis, NW NE NW section 5-10-4, building rig.

Okfuskee County

Only one oil well was completed in Okfuskee County the past week, at Stanolind Oil & Gas Co. No. 1 Bunner, SE SE NE section 25-10-8, Olympic district. After a 50-quart shot, it flowed 830 bbls. of oil through casing in 20 hours, and flowed 1,010 bbls. of oil in 24 hours on potential test. Top of Senora sand was 1,757 feet; total depth, 1,795 feet.

New work in Okfuskee County was as follows: T. Frank Watson and others No. 1 Ott, SE SW SW SW section 8-10-9, location; Sinclair Prairie Oil Co. No. 3 Fisher, SW cor. section 19-10-9, cellar; J. A. Chapman and E. B. McFarlin No. 4 F. Williams, NE SW NW section 30-10-9, set 10-inch casing at 42 feet.

Chapman & McFarlin No. 3 Williams, SW SE SW section 25-10-8, topped Senora sand at 1,722 feet; total depth, 1,747 feet; shot with 30 quarts, made one flow of 35 bbls. of oil and was cleaning out. Blackwell Oil & Gas Co. No. 14 Dalton, SW SW NE section 36-10-8, topped Senora sand at 1,722 feet; was bottomed at 1,745 feet, shot with 30 quarts and flowed and swabbed 200 bbls. of oil in 24 hours, but was not completed. E. Evans and C. R. Morris No. 2 Lively, NE SE NW section 36-10-8, flowed 90 bbls. of oil in 24 hours after a 30-quart shot; top of Senora sand was 1,734 feet; total depth, 1,746 feet.

Hughes County

Two wells were completed in the Hughes County sector of the Olympic field. Magnolia Petroleum Co. No. 8 Oliphant, C, NW SW NW section 1-9-8, topped Senora sand at 1,698 feet; total depth, 1,721 feet; shot with 40 quarts, and flowed 400 bbls. of oil in 24 hours, through tubing.

J. A. Chapman No. 4 fee, NW NE NW section 1-9-8, pumped 108 bbls. of oil in 24 hours from Senora sand topped at 1,708 feet; total depth, 1,734 feet.

Empire Oil & Refining Co. No. 2 Campbell, NE SW SW section 20-7-8, pumped 25 bbls. of oil in 24 hours and was completed as a Booch sand producer at 2,868 feet, total depth. Top of Booch sand was 2,810 feet. It was shot with 60 quarts at 2,838-68 feet.

The only new work reported in Hughes County was at Carter Oil Co., Phillips Petroleum Co. and Ramsey Petroleum Co. No. 1 Hamilton, C W half NE SW section 33-4-9, digging cellar.

Logan County

Continental Oil Co. completed another gusher in the Crescent field, Logan County, at No. 5 McConnell, SE SW SE section 28-17-4w. It topped Simpson sand at 5,995 feet; total depth, 6,070 feet;

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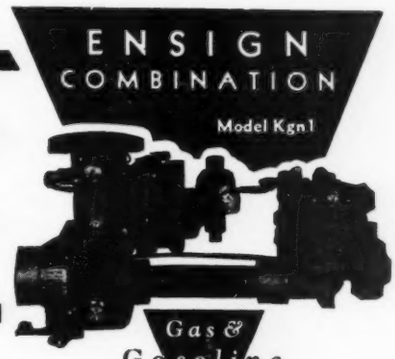

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flowed 922 bbls. of oil in 37 minutes, with 55,000,000 feet of gas, and sanded up. Later, on a four-hour potential test, it flowed 1,674 bbls., 1,519 bbls., 1,017 bbls. and 839 bbls., respectively, making potential of 27,000 bbls. Gas gauged 75,000,000 feet.

Cleveland County

Sinclair Prairie Oil Co. and others No. 2 Franklin, C-36, SE cor. section 21-10-2w, Moore field, Cleveland County, flowed 837 bbls. of oil in six hours, with 9,000,000 feet of gas, and 1,825-1,750 pounds casing pressure. Its potential was set at 24,610 bbls. of oil, by agreement of field operators. It topped second Wilcox sand at 7,246 feet and was completed at 7,297 feet, total depth.

Carter County

Louis Sikes No. 4 Eaves, NE SE NW section 5-2s-2w, Carter County, had sand at 1,396-1,409 feet; broken sand at 1,409-29 feet; total depth, 1,642 feet in shale. It pumped 27 bbls. of oil daily and was completed.

First reports in Carter County: Samedan Oil Co. No. 15 Higgins, SE SE NW section 7-2s-2w, location; Cox & Hamon No. 31 Wesley, NE SW SW section 3-4s-3w, had sand at 1,058-62 feet; total depth, 1,072 feet, and was estimated good for 10 bbls. of oil daily, but not completed.

Osage County

Lewis Production Co. No. 11 Wilson, SW NE NE section 28-24-7, Osage County, flowed 194 bbls. of oil per day after a shot and was completed at 2,751 feet, total depth. It topped Bartlesville sand at 2,658 feet; had first oil at 2,695-2,710 feet, and best pay at 2,729 feet to bottom.

George T. Tselos completed No. 5 Osage, NW SE NW section 5-23-11, in Bartlesville sand at 1,622-1,705 feet, total depth. It pumped 15 bbls. of oil daily.

Two new Osage County locations were announced. Lewis Production Co. No. 3 Smith D, SE NE SW section 28-24-7, was building rig. Midco Oil Corp. No. 5 Osage, C E half SW section 17-22-10, was a location.

Pawnee County

Veasey & Rempseh No. 1 Orme, SW SW SE section 21-21-7, Pawnee County, was abandoned at total depth of 80 feet.

R. D. Davis No. 4 fee, SW NW NW section 21-21-8, an old well, was deepened from 700 feet to 1,447 feet, plugged back to 1,212 feet, was shot, pumped 4 bbls. of oil daily and was recompleted.

Lincoln County

Skelly Oil Co. No. 1 West Sporn, SW NW SW section 21-17-3e, Lincoln County, was a location.

Payne County

Deep Rock Oil Corp. and Continental Oil Co. No. 1 F. E. Hawk, SE NW NE section 9-18-5, an old Payne County well, was deepened from 2,871 feet; topped Mississippi lime at 3,315 feet; Misener sand, 3,490 feet; Chattanooga shale, 3,451 feet; new total depth, 3,492 feet, and was estimated good for 2,000,000 feet of gas daily, but was not completed.

Garvin County

The following new work was reported in Garvin County: Cox & Hamon No. 1 Berry, SE SE SW section 32-1n-3w, location; Carter Oil Co. No. 1 Wright, NE NE SE section 32-1n-3w, location; Skelly Oil Co. No. 2 Gross, NE NE SW section 32-1n-3w, cellar and pits; Cox & Hamon No. 4 Berry, NE SE SW section 32-1n-3w, location.

Southwestern Oklahoma

Everett & Morgan No. 1 Dameron, NW SW SW section 34-3n-18w, Jackson County wildcat, was dry and abandoned at 301 feet, total depth.

In Comanche County, A. E. Heiden No. 1 Mitchell, NE NE NW section 10-3n-10w, an old well, was dry and abandoned after deepening from 1,145 feet to 1,455 feet. It had sand at 1,370-71 feet.

In Kiowa County, Hendershot & Wilson No. 1 Perrish, SE SE NW section 3-6n-15w, wildcat, had a hole full of water at 290-310 feet, total depth, and was dry and abandoned.

In Caddo County, English Drilling Co. No. 2 Gafney, SE SW NW SE section 31-6n-9w, an old well, was originally scheduled to be deepened but operators decided not to deepen at this time.

In Stephens County, Franklin & Duncan No. 1 Woolsey, NW NW SE section 10-3s-6w, an old well, was dry and abandoned after deepening from 440 feet to 1,050 feet. It was a wildcat. Hartman & Hamilton No. 1 Hupp, NW NW section 15-3s-5w, had sand at 1,468-89 feet, total depth, plugged back to 1,482 feet, pumped 15 bbls. of oil daily and was completed.

New work: Edwards & Kadane No. 1 Culberson, NW NE NE section 32-2n-10w, Comanche County, an old well, was drilling at 1,000 feet in lime. Guy Anderson No. 3 Price, SW NE NE section 30-2n-9w, an old well being deepened, had Granite Wash at 1,665-80 feet, and was drilling at 1,680 feet. In Stephens County, J. C. Davis No. 1-B Ross, NW NE NW section 26-1s-9w, was rigging up. Buffalo Oil Co. No. 1 Crownover, SE SE NW section 21-6s-6w, Jefferson County wildcat, had dug cellar and pits.

Rocky Mountain Fields

(Continued from Page 74)

35n-53e. S.D. 2,615 ft.; 500,000 ft. of gas 1,050 ft. and 500,000 ft. at 1,305 ft.; S.O. with 12½-in.

Toole County

The Imperial Oil Co., Ltd., which recently closed down the Maple Leaf refinery at Coutts, Canada, has transferred the Toole County properties of the Montana Pipe Line Co. to its subsidiary, the Transit & Storage Co. Included in the transfer are the pipe line from the east pool north to the border and from the Red Coulee field to Coutts. The Transit company will continue to handle oil purchased for the Imperial with E. F. Cassidy in charge.

All wells in the Kevin-Sunburst field were shut down on account of weather conditions. One completion was the Ohio Oil Co. No. 4 Berg, C SW SW section 31-33n-1w, in the Shelby gas field in the Sunburst at 1,296-1,320 feet for 1,600,000 feet a day with a rock pressure of 155 pounds. It was drilled for gas to augment the supply for the town of Shelby.

Yellowstone County

R. C. Tarrant No. 1 Sayre, NW NW SE section 26-3s-24e, the oil discovery well on the Mosser dome, which made 100 bbls. initially, increased to 140 bbls. per day on the pump from the Dakota at 1,010-36 feet. The crude is being trucked to a refinery at Billings. Same operator is drilling a north offset in his No. 2 Mosser. The pool is apparently a small one in area. Tarrant No. 1 Harper, CEL SW NW section 4-3s-25e, on another small dome, was plugged and abandoned at 1,145 feet. The Dakota at 940-45 feet and the Lakota at 1,135-45 feet were both dry.

R. C. Tarrant No. 2 Mosser, SW SW NE sec. 26-3s-24e. Drlg. 200 ft.; 10-in. at 47 ft.; (first report.)

UTAH

Daggett County

Mountain Fuel Supply Co. No. 1 Lauzur, CNL NW NW sec. 27-3n-24e. Dk. S. D. for winter.

Emery County

California Co.-Continental Oil Co., No. 1-A Palm, C NW NW sec. 27-23s-11e. Drlg. 1,346 ft.

Grand County

Columbia Crude Corp. No. 1 Rath, NW SW SW sec. 12-35-20e. Cmtd. 7-in. at 2,033 ft. in Paradox; drlg. plug. Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. Drlg. 6,093 ft. in Upper Hermosa.

Utah County

Diamond Oil Co. No. 4 Govt., CNL SE NW sec. 16-3s-5e. T.D. 4,900 ft.; fsg. bit.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 1,920 ft.; rng. 6⅝-in.

NEBRASKA

Sioux County

J. M. Huber Corp. et al No. 1 Morgan, C SW SW sec. 32-35n-56w. Drlg. 2,569 ft.; carrying 8¼-in.; water in Dakota at 2,395-2,552 ft.

Lincoln County

Smith & Wright No. 1 Hansen, sec. 24-15n-30w. Drlg. 400 ft.

BUREAU OF MINES

(Continued from Page 55)

number being drilled remained about the same.

Crude runs to stills fell below the 3,000,000-bbl. mark to 2,971,000 bbls. daily. Stocks of crude continued to decline at a rate just over 100,000 bbls. daily, the total on November 30 being 288,998,000 bbls.

Refined Products: As generally expected, the yield of gasoline declined (from 45.2 per cent in October to 44.1 per cent in November) in favor of fuel oil, particularly the burner oils.

The indicated domestic demand for motor fuel in November totaled 39,919,000 bbls., a daily average of 1,331,000 bbls. This represents an increase of 11 per cent over the comparable figure of a year ago. Although this increase is close to the average monthly gain of 1936 over 1935, the prevalence of better-than-average weather in November, 1936, undoubtedly prevented much of the usual seasonal decline in gasoline consumption without apparently influencing preparations for a record-breaking fuel-oil demand. Stocks of gasoline, although several million barrels above the "economic minimum" on the first of the month, rose 1,137,000 bbls. to a total of 58,799,000 bbls. on November 30.

According to the Bureau of Labor Statistics, the price index for petroleum products in November, 1936, was 58.1 compared with 57.9 in October and 52.5 in November, 1935.

The refinery data of this report were compiled from reports of refineries having an aggregate daily crude-oil capacity of 3,771,000 bbls. These refineries operated during November, 1936, at 79 per cent of capacity, compared with an operating ratio of 80 per cent in October, 1936, and 73 per cent in November, 1935.

Bradford Lease Sale

BRADFORD, Pa.—Purchase of a 60-acre lease at Irishtown by William J. Burns and sons of Bradford from Ruth Oil Co. has been announced. The lease has 20 wells with a reported production of 25 bbls. per day. It will likely be developed by the five-spot flood plan.

An interesting Shell Petroleum Corp. group at McPherson, Kans. They are R. W. Bond, division manager; H. E. Zoller, division engineer; R. H. Gwinner, valuation engineer; H. O. Ruark, district superintendent; M. A. Sherwood, mechanical engineer and A. S. Bunte, sub-surface engineer

Michigan Field Report

TWENTY-THREE PERMITS TO DRILL ISSUED IN ONE WEEK

By PAUL A. ELLIOTT

MUSKEGON, Mich., Jan. 18.—The lull before the storm hit Michigan during the second week of 1937 as more than double as many permits were issued to drill as tests completed. The rush to start new tests came as operators vied with one another to get under way on acreage in three newly opened areas of the past few weeks where new major fields were anticipated.

Eight of a list of 23 new permits were for new tests in the vicinity of the J. V. Wicklund Development Co. No. 1-A State, SW SW SE section 11-18n-1w, Buckeye Township, Gladwin County, which the week before was brought in as a possible new field discovery or at least a 4-mile extension flowing about 1,200 bbls. daily.

They were: Mammoth Producing & Refining Co. No. 1-A State, NE NE NW section 14, Buckeye Township; Smith Petroleum and McClanahan Oil Co. No. 1 Brenner, SE SE SW section 11, same township; Sun Oil Co. No. 1 Sallar, SE NW SW section 11, same township; J. V. Wicklund No. 4-A State, NW SW SE section 11; M. H. Bauman No. 1 Wagar, NW SW NW section 14; Garfield Oil Co. No. 1 fee,, NE SW NE section 14; Daily Crude Oil Co. No. 1 Jakab, SE NE SE section 10, Buckeye Township, and M. F. Whitehill No. 1 Rackel, NE NE SW section 11-17n-2w, Beaverton Township, Gladwin County.

Charles W. Teater, Dr. Virgil R. D. Kirkham and associates also were reported planning a test midway between the Wicklund-State, the new well, and Goll, Graves and Mechling No. 1 Oard, 4½ miles southeast.

Clayton—Arenac

In Clayton Township, Arenac County, where a third recent producer was completed for a daily production of about 500 bbls. naturally from the Dundee, two permits for new locations will result in the drilling of the McClanahan Oil Co. No. 2 Seignious, Jr., NE NW NE section 10-20n-4e, and the same company's No. 3 Seignious, Jr., SW NW NE section 10.

Weber Oil Co. topped the Dundee at 2,446 feet in the No. 1 Whiting, NW NE NE section 10, bringing it in for 500 bbls. before acid treatment. James E. Duffey also drilled into the Dundee, after topping the limestone at 2,418 feet on a location west of the McClanahan No. 1 Seignious, the discovery well, which made as high as 1,800 bbls. in a day and averaged 1,378 bbls. daily during December. The Duffy test is the No. 1 Keef, SW SE SW section 3, which struck the oil pay sands but was drilling deeper late last week.

Meanwhile two tests were abandoned as dry, Mammoth Producing & Refining Co. No. 1 Prescott, SW NW SW section 32-21n-4e, Richland Township, Ogemaw County, about a mile northeast of the McClanahan discovery, and the Fortney Oil Co. No. 1 Reeder, NE NE SE section 16, Clayton Township, the former at about 1,750 feet and the latter at 1,784 feet on a location 1½ miles southeast of the discovery.

The McClanahan Oil Co. No. 1 Mee, NE SE SW section 11, Clayton Township, was plugging back from the unsuccessful Dundee to the Berea gas in which a flow of several million feet was encountered on the way down. The C. E. Weller No. 1 Crandall, NW SW NE section 10, was the nearest to the Dundee of a dozen other drilling tests.

Sherman—Isabella

McClanahan Oil Co. had oil in the hole in a test in the new Sherman Township, Isabella County, field opened several weeks ago by the Pure Oil Co. No. 1 Embrey. It was the No. 2 Beutler, NW NW SW section 34-15n-6w, east offset to the discovery. Pure also was completing the No. 1 Ryckman, SE SE NE section 33, same township, north offset to the Embrey.

Five new locations were placed under permit in this rapidly developing area as follows: Pure No. 1 Baker, SE SE NW section 33; same company's No. 1 Beutler, SE NW NE section 33; Pure No. 1 Leiter, NW NW NW section 34; Pure No. 1 Doll, SE SE SE section 28, and same company's No. 1-A Woodin, SW SE NW section 27. The race for production is on with the McClanahan No. 1 Beutler, SW SW NW section 34, also out in front with the Weller-Crandall test.

Wildcat Locations

In addition to the many new locations in the vicinity of new producers, two permits were approved for gas tests in Belvidere Township, Montcalm County, and the third was for an oil test in Ferris Township, Montcalm County, in the Crystal field.

Three permits for wildcats were issued: Michigan Pacific Oil & Gas Co. No. 1 Brise, SE NE SE section 25-6s-5e, Deerfield Township, Lenawee County; Smith Petroleum Co. No. 1 Brink, SW NE NW section 23-14n-7e, Akron Township, Tuscola County, and the L. T. Barber No. 1 Beebe, SW NE NE section 3-5s-15w, Wayne Township, Cass County, first test in southwestern Michigan for a long time—several years. The third covered a test in the proved Greendale Township, Midland County, pool.

The list of 23 permits compared with seven issued during the first week of January.

Vernon—Isabella

In the North Vernon field, George G. Hanners No. 1 Currie, SW NE NW section 5-16n-4w, Vernon Township, Isabella County, was dry in the Dundee topped at 3,890 feet and drilled more than 25 feet in.

Midland County

In Clayton Township, Arenac County, Burks White No. 7 Opperman, SE SW SE section 12-14n-2w, in Greendale Township, Midland County, made 150 bbls. a day in the Traverse at about 3,100 feet. Drilling was to be suspended there to produce as long as possible before deepening into the Dundee.

Montcalm County

The Daily Crude Oil Co. No. 4 Fulford, NW NW SW section 36-11n-5w, Ferris Township, Montcalm County, developed a good show of oil in the Dundee expected to make commercial production after acid treatment scheduled the latter part of last week.

The Kinwell Oil Co. No. 3 Fleck, C SE NE section 15-12n-7w, Belvidere Township, Montcalm County, in the Tri-Townships gas field, already was flowing 1,000,000 feet of gas from the Michigan Stray sand into which it was being drilled.

The Leslie T. Barber No. 1 Rice-Gaffield, SE SE NE section 20, also in Belvidere Township, failed to develop Dundee oil production, so operators were considering plugging back to recapture a commercial flow of Michigan Stray gas.

Saginaw County

Smith Petroleum Co. completed another small Berea oil producer in the Birch Run Township field of Saginaw County when the No. 6 Pariberg, SE NW SE section 20-10n-6e, made 10 to 20 bbls. a day after a shot topping the formation at 1,548 feet.

Gratiot County

The Ide & Glavin No. 7 Gas Co. added a small gasser, the thirty-third in the New Haven Township pool, Gratiot County, when the No. 1 Lewis, C NW NW section 11-10n-4w, registered an open-flow capacity of 2,000,000 feet daily from the

Panhandle Eastern Pipe Line men grouped at the Liberal, Kans., station: J. L. Murphy, division superintendent; R. W. Plank, chief engineer and H. W. Shubring, division superintendent of compressor stations, all of Liberal, and G. T. Koch, superintendent of compressor stations, Kansas City, Mo.

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Michigan Stray sands. Two other Gratiot County tests, the Snell-Smead and Talbot & Hutton No. 1 Sharrar, both Sumner Township wildcats, were nearing the Dundee.

Ogemaw County

H. C. Nelson had a hole partly filled with oil in the Dundee in his No. 4 State, SW SW SW section 31-2n-3e, Churchill Township, Ogemaw County, and was preparing to treat. Pay was topped at 2,460 feet and the well drilled more than 72 feet in.

The W. J. Bernier No. 1 Weiler, NE SE SW section 14-22n-1e, Ogemaw Township and County, however, struck bottom water and was being plugged back to a show at 2,807 feet.

The Gordon Oil Co. No. 1 Everett, SE SW SW section 13-23n-2e, Klacking Township, Ogemaw County, which had been shut down at about 2,500 feet for some time, failed to develop oil or gas in the Dundee and was to be plugged and abandoned.

Muskegon County

Lentz & Miller and the West Michigan Consumers Co. No. 1 Ostbeck, C NW section 13-9n-15w, Sullivan Township, failed to strike Berea gas at about 1,200 feet in the new western Michigan field less than half a mile southeast of production. It will be plugged and abandoned.

The nearest test which struck gas in the Berea, Lentz & Miller No. 1 Clink Estate, SE SE SW section 12, Sullivan Township, was dry in the Dundee and will be plugged back to the shallow gas sands where a flow of more than 3,000,000 feet originally was encountered.

Wildcats

Petroleum Exploration Co. No. 1 Schneeberger, NE SE NW section 11-5n-2w, DeWitt Township, Clinton County, was dry when it struck bottom water in the Dundee at 2,950 feet and was being plugged and abandoned.

The Harley Williams No. 1 Hanson & Rae, SE SE SE section 15-30n-1w, Charlton Township, Otsego County, was about ready to case for the Lower Traverse at 2,130 feet on a second try for production in the same hole.

Southwest Texas Fields

(Continued from Page 70)

La Blanca area of Hidalgo County held the attention of operators in the Lower Rio Grande Valley during the past week, as the Pantana Oil Co. No. 1-B Engleman continued to make increasing amounts of distillate. The test was perforated at 6,660-83 feet with 20 holes, and is flowing gas and about 75 bbls. of distillate per day at the last report.

Elsewhere in the valley area, an abandonment and a reworking job constituted important developments. In Hidalgo County, the Sun Oil Co. No. 1 Sweeny was reported abandoned at 6,598 feet. The test was taken over from H. J. Porter recently, and considerable leasing play has been occasioned by the drilling of the test.

In Willacy County, the Shell Petroleum Corp. is going back into the No. 1 Yturria to deepen it and explore possibilities of better production. The test is the discovery well and sole producer of La Sal Vieja field. The field was opened to production in September, 1936, and had produced over 13,000 bbls. of crude up to the end of the year.

The one drilling test in the Mercedes field of eastern Hidalgo County was abandoned during the week. The Union Sulphur Co. No. 10 Rio Grande Land & Irrigation Co., a northeast outpost test was junked at 8,306 feet after a series of fishing jobs.

In Brooks County, the Alta Mesa field was showing for an extension and for production in a new sand, as California Co. No. 1 Jones tested 300 feet of oil with 60 pounds working pressure in 10 minutes at 3,670-88 feet. The wildcat is located 1 mile west of production in the field. The regular sand in the field is cored at 2,460 feet.

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West and North Texas

By L. E. BREDBERG

56 LOCATIONS MADE IN WEST TEXAS; IMPORTANT SHOWINGS

FORT WORTH, Tex., Jan. 18.—Reports from the West Texas district carried the greatest number of locations ever reported for any one week in the district. Fifty-six locations were staked, Ward and Winkler counties receiving over half of them, 14 in the former county and 18 in the latter. At the same time 34 wells were completed, two of which were wildcat failures and one a field test.

Two wildcat locations were staked, one in Andrews County and one in Fisher County. Hannigan, who is now drilling in the northwest part of Andrews County, made a location in section 18, Block A-48, about 8 miles northwest of the Ogden pool, in the same county. The wildcat in Fisher County is to be put down by Martin and others on the Brown lands in section 4, Block B, W. E. Richardson Survey. Rig has been erected preparatory to spudding.

Wildcat Showing

What may lead to the discovery of a second Delaware field in Loving County, in the northwestern part of that territory, is the showing being made by Mason Oil Co. No. 1 Minnie Kyle, northeast quarter of section 20, Block 55, Township 1s, T.&P. Survey, about 13 miles northwest of the Wheat field, and about 8 miles from another small producer in the extreme northwest corner of the county. This test topped the black lime at 3,872 feet and the sand and pay at 3,910 feet. It filled 2,000 feet with fluid, mostly oil, over night. It is also making an estimated 500,000 feet of gas at this depth, where it was shut down to erect storage. The test is a little over 2 miles north and west of a dry hole abandoned at a total depth of 4,002 feet. That test, drilled in section 22, same block and survey, logged the Delaware lime at 3,912 feet.

Eight miles west, Evans and others No. 1 Johnson, in section 12, Block 57, 1s, T.&P. Survey, have been bailing and testing, making as much as 20 bbls. of oil per day at total depth of 3,214 feet, in the sand, but has not proven a commercial producer yet although shot with 40 quarts of nitroglycerin at 3,138-78 feet.

This new showing for Loving County, which is the best made outside of the Wheat field, will attract more attention to that high gravity sweet-oil-producing area. It will also stimulate wildcatting in quest of Delaware production in this and adjacent counties if the test proves a commercial producer.

Closing Up Gap

The American Maracaibo Oil Co. No. 1 Scharbauer, SW quarter of section 19, Block 44, 1n, T.&P. Survey, Ector County, about 1 mile north and the same distance west of two extension producers in the Goldsmith and Cummins areas, and the same distance east of the Cummins discovery well, is closing the remaining gap between the two fields by proving a producer and a connecting well. At a total depth of 4,225 feet, the well flowed 552 bbls. of oil in 24 hours ending 7 a.m. January 15. It topped the pay at 4,180 feet, and is making one of the best, if not the best natural producer in that new extension area.

New Ordovician Location

The Gulf Oil Corp., the first company to find Ordovician production outside of the Big Lake field in Reagan County, is now moving rig to a location for its third Ordovician test in the Sand Hills area in western Crane County. The company brought in its first deep producer at Sand Hills, and is now preparing to pump its second deep producer from the Simpson, upper member of the Ordovician. Location for the third test is C SW NE section 4, Block B-27, P.S.L. Survey, approximately one-half mile east and a little south of the company's deep discovery. The second deep producer is in section 18, Block B-21, about 1¾ miles to the northeast of the first Ordovician well.

Gaines Discovery

The discovery well of Amerada Petroleum Corp. and others on the Averitt ranch, in section 228, Block G, W.T.R.R. Survey, Gaines County, has been completed after plugging back from a total depth of 5,054 feet to 5,032 feet and acidizing twice. It made 189 bbls. per day through 1-inch choke on 2½-inch tubing. Elevation is 3,318 feet. This discovery is located about 3 miles northwest of Seminole in Gaines County, and cannot be considered a 1937 discovery due to the fact that it has been in process of completion for several weeks. It opens the second producing area for the county and will no doubt lead to considerable drilling this year.

Cochran Discovery

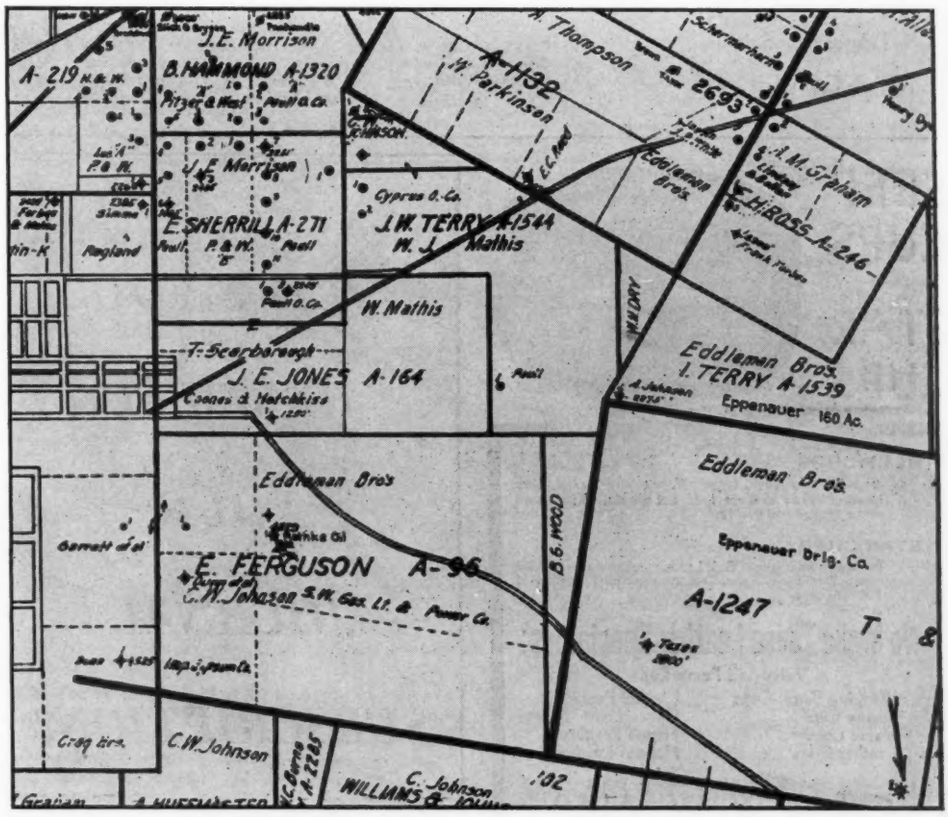
The southeastern Cochran County discovery, the first for the county, drilled by Cascade Oil Co. and others on the Duggan ranch, in Labour 13, League 58, Oldham County School Lands Survey, nearly doubled its outpost when it was given a 2,500-gallon treatment of acid. It made 301 bbls. the second 24 hours after treatment. It had been making around 168 bbls. per day at plugged-back total depth of 5,068 feet, where it had been shot with nitroglycerin. It may be given another acid treatment in an effort to raise its potential still further, the lime taking the acid immediately when treated.

Yoakum's Second Well

Yoakum County's second producer, about one-half mile northwest of the discovery well, in section 678, Block D, John H. Gibson Survey, in the southeastern corner of the county, is now heading oil. It made 60 bbls. on January 16 when tools were pulled. It is drilling below 5,220 feet and is expected to go to 5,235 feet before shutting down to test. If it does not make a good natural producer it will be acidized. The first oil was logged at 5,090 feet, increasing as it was drilled deeper, with a gas increase at 5,175-95 feet, and increase in oil at 5,193 feet. The Texas Pacific Coal & Oil Co., which farmed out part of its block in this area to R. H. Davidson, drilling contractor of Fort Worth, on which he drilled the discovery well, is drilling this second well in the pool, and holds 4,500 acres within a radius of 3 miles from the well.

Another Ector Extensioner

Not only is the Goldsmith and Dunning-Cummins areas being connected by production, but the latter pool is also being connected to the Empire-Cummins area 2½ miles farther to the north. This week a well was completed by the Manson Oil Co. in the NW quarter of section 24, Block 45, Town-



Heavy gas and distillate wildcat discovery 2 miles east of Graham in Young County. The well is estimated good for 40,000,000 feet of gas and 250 bbls. of 65 degrees gravity distillate per day.—(Southwest Mapping Co., Fort Worth)

ship 1n, T.&P. Survey, about 1½ miles north of the Dunning-Cummins discovery in section 33, and about 1 mile south of the Empire-Cummins discovery in section 22. It made 835 bbls. of oil per day after acidizing with 5,000 gallons of acid at total depth of 4,250 feet in lime. Saturation was logged from 4,195 feet to the total depth. This is another important connecting well, for it helps prove up a field from the southernmost end of the Goldsmith field on the south to the Empire-Cummins area on the north, a distance of 10 miles. There is no doubt now that all unproven acreage between producers in this trend will be productive, making another major field for the district.

Jones County

The Fain-McGaha Oil Corp. of Wichita Falls, Tex., is making four locations for as many wildcat tests in Jones County, following the blocking of some 8,000 acres in the southeastern part of the County.

The first test will be drilled on the Claud Lewis and others lands, about 7 miles northeast of Hawley, in section 37, Block 15, T.&P. Survey. About 2 miles northwest of this location they will drill No. 1 T. J. Lotspeich, in section 40, same block and survey. Contracts call for 2,300-foot tests. The Humble Oil & Refining Co. has leased around 1,000 acres in this area, located in Block 15, T.&P. Survey.

North Texas

Two large sales were made in the Bryson area in Jack County in the past week. The larger sale, made by Iron Mountain Oil Co. of Fort Worth to the Ohio Fuel Supply Co., a subsidiary of the Columbia Gas & Electric Co., included 290 producing acres and 1,500 outside acres, making a total of 1,790 acres in the area. Ten wells are producing on the 290 acres. Consideration was reported in the neighborhood of $500,000. Harold Neely of Fort Worth is president of the selling company, which also has production in West Texas.

The other sale consisted of a 50-acre and an 80-acre tract to Thomas D. Humphrey. G. M. Gillespie sold the 50-acre B. F. Rankin lease for a reported $150,000 consideration and the J. W. Birdwell 80-acre tract for a reported consideration of $92,000, part in cash and part in oil. The Rankin tract had 3 wells when the sale was made and the Birdwell tract has 10 wells at the present time.

There are 12 wells drilling in this high gravity producing area at the present time with locations staked for a number of others, including town lot locations in Bryson, which is witnessing a semi-boom. Three wells were completed in the pool this week, the largest of which made 500 bbls. from sand topped at 2,950 feet, and bottomed at 3,000 feet.

Shackleford Discovery

The Owens-Snebold Oil Corp. No. 1 D. A. Ivy, located in section 159, B.B.B.&C. Survey, in northwestern Shackleford County, has opened another shallow producing area in that county. It has been flowing open, making better than 100 bbls. per day with an estimated 3,000,000 feet of gas from the King sand topped at 1,929 feet. Bottom of the hole is 1,936 feet, and casing was run at 1,911 feet. The company holds nearly 1,000 acres around the well.

Panhandle District

The Dolomitic pay field north of the Canadian River in Hutchinson County, has been extended approximately 1½ miles to the east by Holmes and Holmes No. 1 Lyall, in section 33, Block Z, E.L.R.R. Survey. This extension well topped the pay at 2,653 feet and was bottomed at 2,740 feet and shot with 300 quarts from 2,680-2,733 feet. After shooting it filled 1,400 feet with oil, and it is now cleaning out to make a test. The operators have staked location for another test two locations to the east of the new well.

COMPLETIONS IN WEST TEXAS

Crane County

Acme Oil Co. and others No. 1-C Cowden, 2,354-2,489 feet, acidized and shot, 248 bbls. Magnolia Petroleum Co. No. 8 Edwards, 3,474-3,638 feet, shot, 135 bbls.

Ector County

Empire Gas & Fuel Co. No. 1-D Cummins, 4,190-4,255 ft., acidized, 872 bbls.

Gaines County

Amerada Petroleum Corp. and others No. 1-A Averitt, total depth 5,054 feet, plugged back to 5,032 feet, acidized twice, elevation 3,318 feet, initial production 189 bbls. per day through 1-inch choke on 2½-inch tubing, discovery well.

Glasscock County

Fleetborn Oil Co. No. 1 Coulson, dry and abandoned 2,778 feet, elevation 2,717 feet.

Pecos County

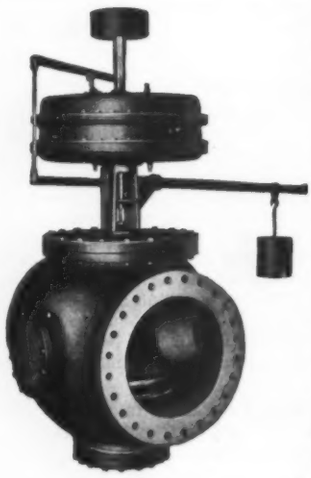
Phil Broun No. 17 Tippett, 482-85 feet, 120 bbls. Stanolind Oil & Gas Co. No. 11-C Tippett, dry and abandoned, 660 feet. San Wan Oil Co. No. 3 Masterson, 1,235-1,469 feet, 425 bbls. Ohio Oil Co. No. 15-H Yates, 1,465-1,788 feet, 1,579 bbls. per hour.

Upton County

Arnold Oil Co. No. 1 Harrell, 2,140-56 feet, acidized, 40 bbls. on pump. Homestead Oil & Gas Co. No. 4 Powell, 2,667-2,775 feet, acidized, 805 bbls. Texas and Pacific Coal & Oil Co. No. 8 Sherk, 2,195 feet, plugged back to 2,180 feet, acidized, 549 bbls. Ajax Drilling Co. No. 3 Sherk, 2,363-2,409 feet, shot, 250 bbls., 5 per cent water. Moore Brothers No. 1 Giddings, dry and abandoned, 4,355 feet, elevation 2,739 feet.

Ward County

Messenger and others No. 3 Cole, 2,205-2,313 feet, 97 bbls.; No. 4 Cole, 2,286-2,313 feet, 192 bbls. Sinclair Prairie Oil Co. No. 6 Hill, 2,309-2,490 feet, shot, 339 bbls. Standard Oil Co. of Texas No. 38 Gordon, 2,306-2,519 feet, shot, 471 bbls. Hill and others No. 7 Clements, 2,220-2,320 feet, shot, 387 bbls. Empire Gas & Fuel Co. No. 19 McDonald, 2,230-2,450 feet, shot, 540 bbls. Gulf Oil Corp. No. 9 Estes, 2,461-2,600 feet, shot, 4,912 bbls. Eastland Oil Co. No. 3 Hathaway 2,480-2,644 feet, shot, 3,853 bbls. in six hours. Agnew



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and others No. 1 Casey, 2,236-2,312 feet, 243 bbls. of oil and 2 bbls. of water.

Winkler County

Monday Oil Co. No. 5 Central State Bank of Abilene, 2,798-2,084 feet, shot, 907 bbls.; No. 8 Central State Bank of Abilene, 2,700-2,972 feet, 872 bbls. Humble Oil & Refining Co. No. 5-C Colby, 2,828-3,100 feet, shot, 211 bbls.; No. 11-A Colby, 2,882-3,025 feet, shot, 341 bbls. in five hours. Gulf Oil Corp. No. 14 Daugherty, 2,775-3,000 feet, shot, 1,171 bbls. Mid-Continent Petroleum Corp. No. 12 Walton, 2,730-2,960 feet, shot, 1,142 bbls. Sun Oil Co. No. 3 Halley, 2,800-68 feet, 391 bbls. Emperor Oil Co. No. 1 Hess, 3,055-77 feet, 2,222 bbls. Atlantic Refining Co. No. 7-B Leck, 3,030-70 feet, 194 bbls. per hour; No. 7-A Leck, 3,030-75 feet, 212 bbls. per hour. Magnolia Petroleum Co. No. 50 Walton, 2,835-2,962 feet, shot, 817 bbls.

CENTRAL TEXAS COMPLETIONS

Callahan County

Drew Beams No. 15 Jackson D, 1,179-90 feet, 15 bbls. Holden & Tyler No. 5-B Cavanaugh, 1,628-76 feet, 25 bbls.

Coleman County

Coleman Gas & Oil Co. No. 1 Irwin, 4 miles southeast of Santa Ana, 2,195-2,206 feet, 1,000,000 feet gas.

Eastland County

G. D. Chastain and others No. 1-B Brashear, 5 miles south of Ranger, total depth 3,526 feet, dry and abandoned.

Shackelford County

Jones & Stasney and others No. 1 Dawson & Conway, 2 miles north of Morris-Buie pool, total depth 1,775 feet, dry and abandoned. Sandefer & Thompson No. 3 Alexander B, 1,630-40 feet, 45 bbls.

Throckmorton County

Canyon Oil & Gas Co. No. 2 L. D. Lily, sand 339-49 feet, total depth 351 feet, 250,000 feet gas; No. 1 Wright, sand 346-57 feet, 250,000 feet gas.

Wise County

Texas-Canadian Development Co. No. 1 Leverett, 5 miles northeast of Rhome, sand 2,617-20 feet, slight show oil, total depth 3,500 feet, dry and abandoned.

Out in Clark County, western Kansas, where the Olson Oil Co. recently opened an oil field, John Goe, tool pusher for the company and J. F. Barnhart, production superintendent, permitted themselves to be "taken" by the field photographer

NORTH TEXAS COMPLETIONS

Archer County

Consolidated Oil Co. No. 2 Morrison, 1,260-75 feet, 25 bbls. Golding & Cochran No. 8 Kunkel, 1,150 feet, dry. E. M. Stilley No. 1 Bridwell, 900 feet, dry. The Texas Co. No. 3 Thomas, 1,475 feet, dry.

Cooke County

Kingery Bros. and others No. 1 Davidson, 1,615 feet, dry. Seitz, Comegy & Seitz No. 1 First State Bank, 3,066 feet, dry. Worsham and others No. 1 J. S. Clark, 2,560 feet, dry.

Montague County

Benton & Holmes No. 16 Davenport, 2,000-19 feet, 65 bbls.

Jack County

C. W. Clark No. 4 Singleton, 820 feet, dry. T. D. Humphrey No. 10 Birdwell, 2,950-3,000 feet, 500 bbls. Charles H. Kadane No. 1 Smith, 2,930-70 feet, 150 bbls. H. R. Montgomery No. 1 Ezzell, 2,925-58 feet, 250 bbls.

Wichita County

Deep Oil Development Co. No. 6 Munger, 3,701-3,878 feet, 750 bbls. T. B. Medders No. 1 Foster, 2,025 feet, dry. White & Duncan No. 10 Goetze, 1,106 feet, dry.

Wise County

Texas-Canadian Development Co. No. 1 Leverett, 3,500 feet, dry.

Young County

L. T. Burns No. 1 McCloud, 927 feet, dry. Nancy McChesney No. 6 Beardon, 1,114 feet, dry. Rathke Oil Co. No. 3 Jeffery, 3,990-4,025 feet, 25 bbls. oil, 20,000,000 feet of gas. W. A. Scarbrough No. 1 Mrs. A. B. Street, 1,307 feet, dry.

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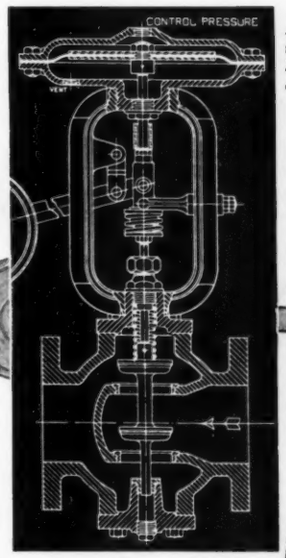

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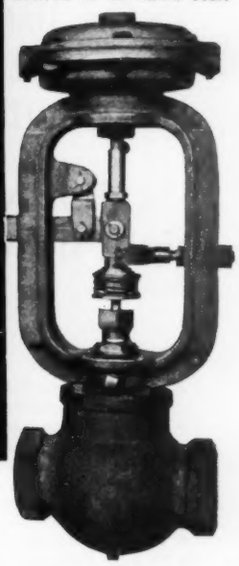

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East and East Central Texas

By
L. E. BREDBERG

MARKED DRILLING DECLINE IN BIG EAST TEXAS DISTRICT

DALLAS, Tex., Jan. 18.—Locations in the East Texas field declined in the past week which presages a decrease in future drilling in that field in which over 22,000 wells are producing and where the density is one well to about each 5.5 acres. Operators are cutting down their drilling to necessary offset wells or inside locations which require drilling. From now until the field is completely drilled, new work is expected to be around 20 locations per week, with completions falling accordingly. There were 33 tests completed in the field in the past week, three of which overstepped the producing limits and proved dry holes. Two of these were in Gregg County and one in Rusk. Six of the producers were put on artificial lift when completed and one was flowing by heads.

Five locations were made in the Talco field in Titus and Franklin counties. Development in this field is expected to maintain the present level until the field is drilled up. Only two wells were completed in the past week, bad weather having some affect upon drilling, causing a temporary shut down for three or four days. There were no completions in the Sulphur Bluff pool, in Hopkins County, but two locations were reported. Lack of outlet has held back development of this pool, but an 18-mile 6-inch line of Murchison and others by way of Talco to the East Texas field, is now transporting around 3,600 bbls. per day out of the field.

Another proposed line out of the field will help relieve the congestion. The Big State Oil Corp., joint owner in a producing property, Sulphur Bluff is planning on building about 12 miles of 6-inch line to Hager Switch to the south on the Cotton Belt Railroad, from which point the oil will be shipped by tankcar. Contracts are now being made by the company with producers in the field for at least one year. With two outlets, development will be stepped up to a certain extent, contingent upon weather conditions which cuts down the flow of the low gravity viscous oil.

Operators in the Talco field are slowly feeling their way east and west of the field in hope of finding production. G. M. W. Oil Co. has staked location for No. 1 Edwards, in the J. Slaughter Survey, 1,460 feet east of a recently completed well drilled by B. G. Byars on the Edwards lands, and which made a previous extension of 1,150 feet to the southeast. Byars has also staked location for No. 2-A Blackburn, in the J. W. McCullough Survey, which will make a 1,100-foot southern extension to this part of the field if it proves a producer.

Wildcatting

Wildcatting in the East Texas district is at a low ebb, with but few tests proposed for the near future, and comparatively few active tests in the entire district.

The Penn Oil Corp. of Oklahoma City has abandoned its location on the A. B. Manning farm in the S. Owens Survey, 5 miles northeast of Lone Oak in southeastern Hunt County and has made a new location for a Trinity sand test on the R. B. Parish farm, in the Nancy Danley Survey, 7 miles northeast of Lone Oak.

The only other wildcat location reported was that of Stroud and Lowe on the P. L. McNeill farm, in the J. W. Guest Survey, 4 miles north of Ben Wheeler in Van Zandt County. It was spudded and shut down at 20 feet. Whether or not it will be carried down in quest of Trinity production is not known, its first objective being production from the Woodbine, from which the Van field, about 9 miles northeast, is producing.

The Humble Oil & Refining Co. and Tide Water Oil Co.'s important Trinity test on the Easter farm, in the R. Hotchkiss Survey, 5 miles northwest of Alba in eastern Rains County, is shut down for fuel at 7,655 feet in sandy shale.

The Everts Drilling Co. No. 1 O. W. Killam, located in the J. Robbins Survey, 6½ miles southeast of Fairfield in Freestone County, is apparently dry in the Woodbine and is shut down at 4,390 feet in lime and shale with no shows reported, and may be abandoned here.

Trinity Test

A. W. Glazier of Fort Worth, and others, have assembled a block of 11,000 acres southwest of Randolph in Fannin County, and propose the sinking of a 6,000-foot Lower Glen Rose (Trinity) test. Location has been made on the N. Young farm, in the S. Henry Survey, 1½ miles southwest of Randolph.

The Superior Oil Co. of California is drilling its No. 1 P. D. Paul, located in the Mary Latham Survey, 4½ miles northeast of Quinlan, on the fault line in Hunt County, at a rapid pace. It is down below 2,300 feet. Elevation is 489 feet. It will be the most interesting test in the district during the next two or three weeks as it is located on one of the most favorable looking faulted structures on the Mexia-Talco Fault, on which a large lease and royalty play took place about a year ago.

The American Liberty Oil Co. is leasing acreage around the old LaRue salt dome structure near LaRue in eastern Henderson County, preparatory to drilling the third attempt to find oil in that area. In 1929 a "hot" lease play took place in the area, previous to the drilling of the first wildcat by the Shell Petroleum Corp. That and a second test, drilled by the Superior Oil Co. of California in 1932, were dry.

COMPLETIONS IN EAST CENTRAL TEXAS

Anderson County

F.H.E. Oil Co. No. 1 Robinson, total depth 5,351 feet, estimate 200,000,000 feet of gas; No. 1 Moody, total depth 5,342 feet, 80 bbls. in 24 hours through one-eighth inch choke. Tide Water and Seaboard Oil Corp. No. 2-C Royal & Cone, 4,036 feet, estimate 20,000,000 to 30,000,000 feet of gas.

Henderson County

Roeser and Pendleton, Inc., No. 3 Thompson, 4,093-99 feet, 114 bbls. in 24 hours through one-eighth inch choke.

Titus County

W. B. Hinton No. 6 Hargrove, 4,171-4,335 feet, 25 bbls. per hour. Housh and others No. 1 Hargrove, 4,160-4,337 feet, 150 bbls. in 24 hours through one-fourth inch choke.

EAST TEXAS COMPLETIONS

Gregg County

Gulf Oil Corp. No. 13 Fonville, 3,498-3,516 feet, 80 bbls. per hour; No. 10 Oten, 3,562-69 feet, 2 bbls. per hour on swab. Humble Oil & Refining Co. No. 10 McFarlyn, 3,555-90 feet, dry and abandoned. J. Pekora and others No. 3 Crow, 3,670-90 feet, dry and abandoned. B. F. Phillips No. 1 State, 3,580-82 feet, 50 bbls. per hour; No. 2 State, 3,584-96 feet, 40 bbls. per hour; No. 2-B York, 3,580-81 feet, 30 bbls. in 30 minutes.

Shell Petroleum Corp. No. 28 Richey, 3,562-80 feet, 60 bbls. per hour; No. 7 Wills, 3,609-10 feet, 60 bbls. per hour. Stanolind Oil & Gas Co. No. 11 Lee, 3,605-25 feet, 42 bbls. per hour. L. W. Callender and others No. 15 Walker, 3,563-64 feet, 30 bbls. per hour. M.&F. Corp. No. 7 Crews, 3,731-32 feet, 25 bbls. per hour. C. V. Landsberry No. 20 Money, 3,575-77 feet, 43 bbls. per hour. Magnolia Petroleum Co. No. 11 Utzman, 3,494-3,522 feet, 20 bbls. in seven hours on pump; No. 3 Mayfield, 3,617-20 feet, 20 bbls. in three hours. H. S. Moss No. 15 Marshall, 3,506-28 feet, 22 bbls. per hour. Vierson and Kingwood No. 9 Muckleroy, 3,525-26 feet, 60 bbls. per hour.

Rusk County

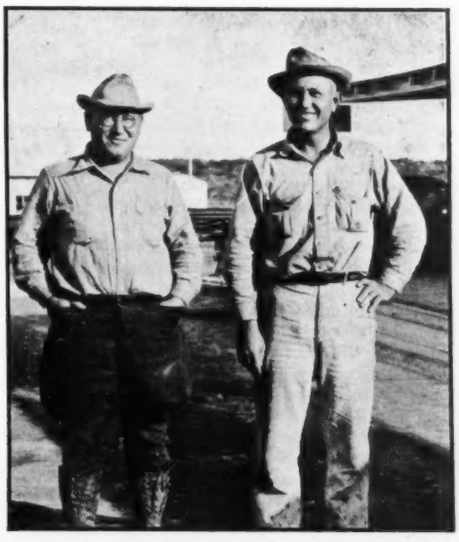
Atlantic Refining Co. No. 19 Fair, 3,590-3,702 feet, 94 bbls. per hour. T. J. Carter No. 2 Tipps, 3,629-36 feet, dry and abandoned. Davis and Hart No. 1 Perry Heirs, 3,636-44 feet, 10 bbls. per hour. Gulf Oil Corp. No. 11-B Holt, 3,790-96 feet, 20 bbls. in 23 minutes. Humble Oil & Refining Co. No. 52 Blackwell, 3,694-95 feet, 40 bbls. per hour. Hunt Oil Corp. No. 12-F Bradford, 3,535-3,620 feet, 20 bbls. per hour on pump. Octo Oil Co. No. 2-C Bradford, 3,610-48 feet, 40 bbls. per hour. Grady and Vaughn No. 8 Thrash, 3,767-3,725 feet, 60 bbls. per hour.

Smith County

Sun Oil Co. No. 1 Patterson, 3,725-26 feet, 35 bbls. per hour. Sutton and Hawkins No. 6 Smith (Church), 3,833-35 feet, 50 bbls. in five hours on pump. Wheelis Oil Corp. No. 12 Patterson, 3,714-15 feet, 20 bbls. per hour.

Upshur County

A. L. Baggett and others No. 1 Owens, 3,732-33 feet, 30 bbls. per hour. Bell Oil, Inc., No. 5 Phillips, 3,752-60 feet, 30 bbls. in two hours on swab. Clark and Cowden No. 3 Evers, 3,777-86 feet, 20 bbls. per hour. A. N. Landis and others No. 1 Gillespie, 3,704-06 feet, 20 bbls. per hour by heads. Tex Field Oil Co. No. 8 Shelton, 3,736-37 feet, 30 bbls. in two hours on pump.



J. R. B. Moore (left), superintendent of drilling and production for Mills Bennett Production Co., Lopez district, Southwest Texas, and Herman Gayle, district chief gauger for Magnolia Pipe Line Co.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Jan. 16.—Deliveries to Imperial Oil, Ltd., and British American Oil Co. from the Turner Valley field for December totaled 97,117 bbls., compared with 93,208 bbls. in November. Imperial receipts totaled 65,227 bbls., including 4,260 bbls. clear naphtha; 54,146 bbls. discolored naphtha; and 7,821 bbls. of light crude. British American receipts comprised 26,048 bbls. of crude and 5,842 bbls. of discolored naphtha, a total of 31,890 bbls.

December deliveries bring the total for the year to 1,041,451 bbls. delivered to the Imperial, British American and Bell companies; compared with 966,528 bbls. in 1935, an increase of 74,923 bbls. These figures will be supplemented by sales to smaller companies or direct to consumers, which will approximate 15,000 to 20,000 bbls. a month.

Turner Valley Producers

On the west side of the South Turner Valley structure, Foundation Royalties No. 1 LSD 5, section 21-18-2w5, bottoming in the Madison lime at 6,456 feet, has tested production after running 2½-inch tubing. The gas flow, originally 470,000 feet a day, was doubled, but a 24-hour test made only 342.77 bbls. of crude, where the well originally made around 580 bbls. through casing. Tubing has been pulled and efforts will be made to drill up the bailer lost before the well came in and clear the hole of drilling fluid and obstructions. Tubing will then be rerun and further production tests made.

Royalite Oil Co. No. 3 Sterling-Pacific, LSD 13, section 33-18-2w5, bottoming in the Madison at 6,788 feet, has run 3-inch tubing, replacing the original 4-inch, and is testing production. It made up to 125 bbls. a day previously.

West Side Drilling

On the west side of the Turner Valley structure, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, about 5 miles north and west of the crude producers, is below 5,475 feet, and expected to get the lime around 6,400 feet. In section 5-19-2w5, Mercury Royalties No. 1, LSD 8, entered the Benton formation around 400 feet and is preparing to set casing. In section 4-19-2w5, Mercury Oils No. 5, LSD 3, is working on derrick.

In section 33-18-2w5, Royaltie Oil Co. No. 4 Sterling Pacific, LSD 4, offsetting Turner Valley Royalties No. 1 to the north, is below 6,100 feet and logging closely with the Turner Valley well, which got the lime at 6,396 feet. No. 5 Sterling Pacific is in LSD 12, same section.

Farther west, in section 32-18-2w5, British Trans-Canada Oils, Ltd., will drill No. 1 in LSD 10, on acreage secured by K. M. Leitch at the Alberta government auction. Mr. Leitch paid $10,455 for the 40 acres, and will receive a royalty from the company. The company is incorporated under Alberta charter at Calgary, and officers are: President, Tom Campbell; vice president, C. H. Kayler; secretary, Dr. R. R. McIntyre; managing director, N. White; director, Dr. J. G. Pullar. The company holds some 1,200 acres on structures outside Turner Valley, and is financed largely by Winnipeg capital. West Turner Petroleums, Ltd., organized by British Columbia capital, will test acreage in LSD's 2 and 3, same section, secured from M. M. Shore Syndicate. Officers are: President, Robert Wilkinson; vice president, F. E. Burke; secretary-treasurer, W. E. Sutton; directors, F. M. McMahon, James Kerr, N. L. Harvey, John Hunter. Location is about a quarter mile west and a little north of Turner Valley Royalties No. 1.

In section 28-18-2w5, B. & B. Co. No. 1, LSD 12, got the Madison lime at 6,195 feet, 201 feet higher than Turner Valley Royalties No. 1, a quarter mile north. It has resumed drilling after cementing casing at 6,215 feet, and will likely be finished this month. Richland Royalties No. 1, N half LSD 12, same section, has derrick up. Richland No. 2, LSD 5, same section, is cleaning out preparatory to deepening from 4,060 feet. Richland No. 3 Central, LSD 14, is below 3,600 feet.

In LSD 4, same section, Model-Spooner No. 1 has been located about midway between the Turner Valley Royalties and Foundation producers. The test is jointly financed by Model Oils, Ltd., Spooner Oils, Ltd., and Reward Oils, Ltd., each holding a one-third, while British American Oil Co. has a royalty interest and will take production. Drilling will be supervised by Clarence Snyder, and cable tools will be used to about 3,000 feet, possibly finishing with rotary. Acreage was owned by Model Oils, Ltd. It will spud this month.

In section 29-18-2w5, Globe Royalties No. 1, LSD 7, has let contract for drilling 3,000 feet of hole with cable tools to C. E. Snyder. Davies Petroleums No. 1 has been spotted in NE cor. LSD 2, same section, on acreage of Madison Oils, Ltd., about three-quarters of a mile southwest of Turner Valley Royalties No. 1. H. E. Morgan will drill it on contract, using cable tools to 3,000 feet. Maynard J. Davies of Calgary is president. Commoil, Ltd., subsidiary of Commonwealth Petroleums, Ltd., is arranging for a test on acreage in LSD's 10 and 15, same section.

In section 21-18-2w5, Newfold Royalties No. 1, LSD 11, is below 5,434 feet. West Side Royalties No. 1, LSD 3, same section, is below 5,878 feet. It is south and east of Foundation No. 1 producer, which got the lime around 6,020 feet.

In section 20-18-2w5, Monarch Royalties No. 1, LSD 9, has derrick, water and gas lines completed and is hauling equipment. In section 16-18-2w5, Firestone Petroleums No. 1, LSD 13, is working on derrick. In section 17-18-2w5, Prairie Royalties No. 1, LSD 16, has 136-foot derrick up and is waiting for rotary outfit.

Farthest South Test

National Petroleum Co. of Calgary, headed by Robert Wilkinson, George Harris and associates, has located a new farthest south test in LSD 13, section 9-18-2w5. It is expected to spud early in February. It is in the northwest corner of the section, about 1½ miles south of Foundation Royalties No. 1 producer, and 1¼ miles south of West Side Royalties No. 1, LSD 3, section 21-18-2w5, the nearest active drilling. It is about 5¾ miles east and 2¾ miles north of Maple Leaf Royalties No. 1 Banner on the Highwood-Sinclair structure, the nearest drilling to the south.

Turner Valley Field

In the older Turner Valley field, A. B. Claypool and associates No. 1 Rand Petroleum, LSD 5, section 34-18-2w5, is shut down at 4,300 feet waiting for more settled weather.

Model Oils, Ltd., of Calgary, has contracted its output, approximating 7,000 bbls. a month from Alberta and Montana wells, to British American Oil Co., until March 1, 1939.

High River—Aldersyde

On the Cayley structure east of Turner Valley, Arca Petroleum Corp. No. 1, NW section 24-18-1w5, bottoming in the Madison limestone at 8,800 feet, is cementing casing. The well is the deepest in the British empire, and the casing string the longest run in Canada. It got the lime at 8,756 feet, and may go to 9,000 feet to get commercial production. Arca Development Corp. backed jointly by Imperial Oil, Ltd., Canadian Western Natural Gas Co. and Calgary & Edmonton Corp., holds 43,047 acres of potential oil lands in the High River area, comprising part of Township 17 and all of Townships 18, 19 and 20 in Ranges 29 and 30w of the fourth, and part of Townships 17, 18 and 19, Range 1w, fifth. Officers are: President, H. R. Milner, president of Canadian Western Natural Gas, Light, Heat & Power Co.; secretary-treasurer, F. A. Smith; directors, S. E. Slipper, J. H. McLeod, H. F. Osler, L. D. M. Baxter and Dr. O. B. Hopkins. No pronounced oil or gas indications have been encountered so far.

On the Aldersyde structure, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, has resumed from 7,600 feet.

Tests in Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is below 6,972 feet with considerable lime, and is expected to get the Madison a little below 7,000 feet. There are increased oil showings.

On the Kootenay dome west of Calgary, Roxana Petroleum No. 1, section 8-24-7w5, has 13⅜-inch hole bottoming at 1,607 feet and is running 10-inch casing. There has been some increase in gas flow. On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is resuming from 4,810 feet.

On the Highwood-Sinclair structure, southwest of Turner Valley, Maple Leaf Royalties No. 1 Banner, LSD 6, section 34-17-2w5, is below 2,400 feet and about 300 feet from the bottom of the lost hole.

On the Mill Creek structure west of Pincher Creek, Weymarn Petroleums No. 2, LSD 5, section 7-6-1w5, is at 5,960 feet with increased oil and gas shows, and running casing preparatory to testing.

Twin River Test in Lime

On the South Twin River structure, Del Bonita Associated Oils No. 3 Twin River, LSD 9, section 10-2-20w4, got the Madison limestone at 3,978 feet, and cemented casing at 3,988 feet. From 3,978 feet the lime showed marked porosity with brown coloration and definite oil odor, saturation increasing between 3,985 and 3,988 feet.

This is the third well on the Twin River structure drilled into the Madison lime. Parco Oil Co. No. 1, drilled in 1931 some 1½ miles south, set casing on top of the Madison at 3,860 feet. Gas, estimated at 500,000 feet a day, occurred from 3,860-70 feet with oil from 3,870-3,900 feet, when water appeared. After drilling to 4,146 feet with water increasing, the water was plugged off at 3,890 feet and a long series of experiments undertaken, including three small shots of 4 to 10 quarts each. Acid treatment was not tried. During the tests Parco No. 1 made 15 bbls. per day of 32-gravity for 10 consecutive days on the pump. The gas flow was never measured, but the maximum reported shut-in pressure was between 975 and 1,000 pounds. The production test was before shooting. After shooting, company reorganization and change of ownership caused withdrawal of the operators from Canada and no further efforts were made to complete the well, but with debris in the hole it flowed 2½ bbls. a day for several months when the casing was pulled and the well abandoned.

Nordon Roney No. 2 Twin River, three-quarters of a mile north of Parco No. 1 and about the same distance south of Del Bonita Associated No. 3, was located after a seismic survey which indicated it was higher on structure and encountered a thicker gas zone and somewhat more gas than Parco No. 1. Oil was encountered below the gas, making 45 bbls. a day for two days, with 750,000 feet of gas. Later it was shot twice with 5 quarts and 45 quarts and still later treated with hydrochloric acid. Water appeared and the well was abandoned when a disastrous fire greatly increased the difficulties of completion. The well proved the existence of a closed dome with considerable structural closure and with gas, oil and water in normal order.

Del Bonita Associated No. 3 was located with a view to getting the limestone somewhat lower on the structure than the gas cap indicated in two previous wells, and is thought to have landed and cemented production casing below the gas cap and definitely in the oil zone. It will be completed with cable tools as soon

(Continued on Page 88)

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Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Jan. 18. — A review of completed operations for the week shows 11 gas wells, 5 dry holes and 2 oil producers in the Central Ohio field, 4 dry holes and 3 small oil producers in Indiana, and 2 dry holes and 1 oil producer in the Kentucky fields.

CENTRAL OHIO FIELD

The largest oil producer completed in the Central Ohio field during the week was brought in by Sturm & Co. on the Sid Gaumer property, section 3, Hopewell Township, Licking County. No. 3 on this farm, was drilled to a total depth of 2,958 feet and made 40 bbls. the first 24 hours after a shot. In Madison Township, same county, S. H. Long No. 7 E. D. Fulton was drilled through the sand at 792-802 feet, and made 8 bbls. after a shot.

In Cayuhoga County, Tract 3, Olmsted Township, Ohio Fuel Gas Co. No. 1 J. W. Ohmes was completed below the second Clinton sand at 2,626-30 feet without a show of oil or gas and has been abandoned. In the same tract, East Ohio Gas Co. is drilling below 400 feet on the Joseph Surman property and in Lot 306, Newburg Township, National Smelting Co. is drilling in No. 1 J. H. Breck.

Ohio Fuel Gas Co. completed a small commercial gas well on the John Fike farm, section 17, Orange Township, Ashland County, below the Clinton sand at 2,531-37 feet. This company has staked a location on the J. W. Brown property, section 20, same township, and a new location on the J. and G. Davidson property, section 24, Troy Township. In section 28, Mohican Township, Faulkner & Phelps No. 2 Martin Humm was drilled through the Berea sand at 737-40 feet and has been abandoned. In section 5, Hanover Township, Rutlege & Mosholder have moved a rig on the D. E. Ringler farm.

In Huron County, section 4, Hartland Township, McCorkill & Co. No. 1 E. A. Morgan, which made a show of oil and gas at 701 feet, has been shot and will be put on a pump. In section 2, Bronson Township, Williams & Co. No. 1 Gertrude Roth, which made a showing of gas in the lime at 550 feet, has been completed as an 8,000-foot gas well.

In Holmes County, section 20, Monroe Township, Ohio Fuel Gas Co. No. 1 Joseph Mitten was completed below the second Clinton sand at 3,-288-3,324 feet without a show of oil or gas and has been abandoned. In section 19, same township, Ohio Fuel Gas Co. No. 2 Hannah Tidball was completed in the Clinton sand at 3,-171-88 feet as a commercial gas well. In section 3, Washington Township, Mehowa Oil & Gas Co. is moving a rig on the H. E. Miller property.

East Ohio Gas Co. No. 3 T. and J. Sorrick, section 5, Jackson Township, Stark County, was drilled through the Clinton at 4,192-4,220 feet and gauged 2,536,000 feet after a shot. In section 27, same township, East Ohio Gas Co. has staked a location on property owned by the Society of Precious Blood.

In Lot 62, Columbia Township, Lorain County, Snyder & Wiles are spudding on the Charles Osborne location and drilling below 1,400 feet on the Mary Walker property, same lot.

Upham Gas Co. No. 1 J. E. Greer, section 15, Jefferson Township, Knox County, gauged 950,000 feet naturally in the top sand at 3,047-57 feet and had a rock pressure of 1,000 pounds. In section 19, Butler Township, Ohio Fuel Gas Co. No. 3 Lem Stricker was completed below the second Clinton sand at 3,138-67 feet, a small commercial gas well. In section 28, same township, Ohio Fuel Gas Co. No. 1-6,374 Jasper Underwood was dry in the top sand at 2,-978-88 feet but completed as a large commercial gas well in the second sand at 3,004-20 feet. In section 3, Union Township, Upham Gas Co. No. 3 Warren Farmer was completed as a 143,000-foot gas well at 706 feet. In section 19, Howard Township, J. B. Reed & Co. No. 1 Herbert Body was drilled to 2,672 feet and made 120,000 feet after a shot.

In Richland County, section 27, Worthington Township, Ohio Fuel Gas Co. No. 1 W. G. Waddell was drilled to 2,783 feet without encountering the sand and has been abandoned.

In Fairfield County, section 22, Berne Township, City Natural Gas Works No. 1 Commodore Valentine was drilled through the Clinton sand at 2,223-31 feet to 2,253 feet without a show of oil or gas and has been abandoned. Same operators are moving a rig on the Matilda Bowers property for No. 4, in section 33.

In Morgan County, section 12, Center Township, Barnesville Development Co. No. 1 Jasper Danford, which made a showing of gas at 1,-548 feet, has been abandoned. In section 20, York Township, Hopewell Gas & Fuel Co. is building a rig on the Marshall Tidball property. In section 2, Marion Township, Burns Oil & Gas Co. is rigged up for No. 11 Maria Metzger.

Tyree & Co. No. 6 Ira S. Bartells, section 36, Sutton Township, Meigs County, was drilling through the first Cow Run sand at 530-43 feet, with a showing of oil and gas but was abandoned when the hole filled with water. In section 1, Rutland Township, Marshall & Reed No. 1

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Russell Cook estate was completed below the Salt sand at 691-726 feet and gauged 785,000 feet of gas naturally. In section 2, same township, Ohio Fuel Gas Co. has staked a location on the Jasper Edwards property and in section 35 Lebanon Township, and staked a location for No. 2, on the Daniel Sayre farm and abandoned location for No. 4, on the Stanley Cross property in section 29. In section 35, Ohio Fuel Gas Co. No. 2 W. Hoyt Hall is drilling in the first Berea sand and has made a very good show of gas.

KENTUCKY FIELDS

A decline in completed operations is noticeable in the Kentucky fields, but many new locations are being staked and a great many wells are in various stages of completion. In the Livermore pool, in McLean County, E. P. Charlot No. 1 Livermore Theater was dry. In the same county, 2 miles southwest of Beach Grove, Powell Brothers No. 1 Henry Harden was also a duster.

In Henderson County, north of Niagara, Ranger Oil Co. and others No. 14 C. M. Gish 200 acres, had an initial production of 15 bbls. after a shot.

INDIANA FIELDS

There is a slight increase in operations in the Indiana fields at this time but, for the most part only routine work is in progress. In Perry County, section 30, Clark Township, Dice & Zoercher No. 13 Alvin Franchville was drilled to 517 feet and had a production of 3 bbls. after a shot. In section 18, Oil Township, Charles Wyman No. 1 Ida Rissler had an initial production of 2 bbls. at 270 feet. In Anderson Township, section 6, Charles Dice No. 4 Charles Krutz was drilled to 623 feet without a show and was abandoned.

In Posey County, section 14, Black Township, Jasper C. Ellis No. 1 E. and R. Stein was drilled to 1,930 feet and abandoned.

In Randolph County, section 9, Jackson Township, E. G. Henderson No. 1 J. E. Conklin made 4 bbls. the first 24 hours after a shot.

Wynn Brothers No. 1 Augustus Holtzman, section 3, Harrison Township, Spencer County, was completed at 700 feet—dry. In section 28, Luce Township, P. M. McMahan & Co. No. 1 John Stevenson was drilled to 1,166 feet without a show and abandoned. In section 6, Huff Township, George Beauchamp is drilling No. 3 John Heintz. In section 13, Grass Township, Hollingsworth Gas & Oil Corp. is drilling below 1,000 feet on the P. and A. Axton farm.

In Vigo County, section 32, Prairie Creek Township, Siosi Oil Corp. is drilling No. 24 William Riggs.

In Warrick County, section 12, Boone Township, Imperial Oil & Gas Products Co. is drilling on the Mabeth Mining Co. property.

Canadian Fields

(Continued from Page 86)

as the outfit from Sunshine Oils No. 1 is available.

On the Del Bonita structure south of Lethbridge, Sunshine Oils No. 1, LSD 10, section 19-1-21w4, got the lime around 5,172 feet and struck a big burst of gas and considerable light crude around 5,190 feet. It was shut down at 5,230 feet owing to extremely cold weather freezing the water line. With temperature 40 below, H. J. Orcutt, in charge of the water pumping outfit, was overcome by gas and lay unconscious several hours. He is recovering. Others of the crew suffered severe frostbites. The frozen water line was taken apart and the pipe carried to flares to be thawed. Earlier a violent blizzard partly wrecked the camp and heavy snowfall cut off communication except by airplane.

On the Majestic structure in the Taber area, Plains Petroleum No. 1, LSD 13-14, section 29-9-17w4, has resumed from 3,100 feet after shut down for bad weather.

Ontario Drilling

In Chatham Township, Kent County, Ontario, Union Gas Co. No. 6, SE Lot 10, Concession 12, is below 1,660 feet, exceeding 400,000 feet a day. The gas was first encountered a little below 1,400 feet, with scattered pays to about 1,600 feet. Union No. 5, some 4,000 feet southwest of No. 6, some weeks ago got a flow around 225,000 feet a day from the same horizon. No. 6 will be carried somewhat deeper.

In the Dawn Field, Lambton County, Ontario, Union Gas Co. No. 89, NE Lot 13, Concession 2, Dawn Township, is below 300 feet. Union No. 90, E half Lot 24, Concession 4, is below 1,500 feet.

In the Eden field, Elgin County, Central Pipe Line Co. No. 2, S. Williams farm, Lot 25, Concession 8, Bayham Township, finished in the Clinton sand at 1,320 feet with 470,000 feet naturally.

In the Brownsville field, Oxford County, W. J. Hussey has started a test for the Treleaven Syndicate of London on the west side of the Aloka lease, Lot 23, Concession 12, Dereham Township.

In Tilbury East Township, Detroit Syndicate No. 1, Lot 5, Concession 8, is rigged. Claire Stover has rig up for No. 1 test for McNamara Construction Co. of Toronto in east part Lot 5, Concession 10, on acreage secured from Dr. Luke Smith. Walker & Drake No. 1, Moffat farm, Lot 6, Concession 9, is maintaining a pumping production of 30 bbls. a day.

California Fields

(Continued from Page 59)

13.8 gravity from 1,205 feet after the hole had been plugged back from 1,218 feet. Practically all of these shallow completions show a water cut of approximately 20 per cent. In the Round Mountain field of Kern County, Shamrock Oil Co. has completed No. 6, section 6-28-29, pumping 148 bbls. of 15.6 gravity from 1,561 feet. Shell Oil Co. has about completed rigging up pumping equipment on No. 12 Freeman.

In the Kern River field, Honolulu Oil Corp. has completed No. 59, out on the west front in section 8-28-27, pumping 240 bbls. of 15.5 gravity from 2,822 feet after the hole had been plugged back from 2,896 feet. Honolulu has completed several satisfactory wells on this property within the past few months and has two other potential producers under way. Republic Petroleum, after being inactive in the Kern Front field for several months, has staked location for No. 16 Strassburger in section 24-28-27. The Kern River field showed a pronounced increase in drilling during the past fortnight and the number of new locations indicates this field will continue active for several months. In the original Kern River field as differentiated from drilling out on the west front during the past several years, Thomas McManus has picked up the pay in No. 1, section 2-29-28, at 240 feet and an early test is expected. In the Arvin district, several miles southeast of the Mountain View field in the extreme southern end of the San Joaquin Basin, General Petroleum is making preparations to conduct a production test on its wildcat in section 26-31-29. This well, bottomed at 7,462 feet but plugged back to 7,395 feet and finished with a 6⅝-inch liner including 575 feet of perforated, has shown evidence of production. General Petroleum will open a new field if it results in commercial production. Superior Oil Co. has a rig foundation built for No. 1 Arvin, not far from General Petroleum Corp.'s wildcat, but has temporarily suspended work pending the outcome of the other test.

El Segundo

Drilling in the El Segundo field of Los Angeles Basin shows a further increase and before the close of the month it is probable five additional wells will begin making hole. Standard Oil Co. has not yet indicated intention of undertaking development in El Segundo but will probably start one or two wells as soon as the trend can be determined with any degree of accuracy. Standard holds several hundred acres under lease immediately adjoining Union Oil Co.'s Security lease on the south and may, if lease restrictions permit, sit tight until Union Oil Co. No. 1 Security reaches the point where correlation work is possible. Caminol Co. is making good progress with No. 1 El Segundo, a recent spud, and as this lease is definitely proved for production the company will probably spud in No. 2 El Segundo soon. Richfield Oil Co., which focused the attention on this district several weeks ago, is running two strings of tools but is expected to step up the rate early in February if the well logs correlate with its No. 1 El Segundo. Republic Petroleum, discoverer of the El Segundo field, has one well under way and is rigging up rotary in another. In the East Coyote field, Standard Oil Co. recompleted No. 5 on Coyote Hills property No. 2 flowing 304 bbls. of 25.2 gravity from 4,700 feet after the hole had been finished with a 5-inch liner carrying 381 feet of perforated.

Largest Tanker

Atlantic Refining Co. has contracted for the largest welded tanker ship afloat with Sun Shipbuilding & Dry Dock Co., of Chester, Pa., which has started work on the boat scheduled to be delivered the last of 1937. It will be 521 feet long, 70-foot beam, with capacity of 156,000 bbls. of gasoline.

The new tanker will be driven with turbo-electric engines having rated power of 5,000 horsepower and will drive the boat at 13 knots per hour. The tanker will make the trip from Texas Gulf Coast ports to Philadelphia in six days.

Atlantic Refining Co. is now nearing completion on a complete new refinery at Atreco, Tex., where its trunk crude lines terminate. Shifting of a part of its refining operations from the Middle Atlantic area to the Texas Gulf Coast by Atlantic will require large speedy tankers to effect satisfactory delivery schedules for its distributing system in the northeastern part of the country.

Jackson Gas Field

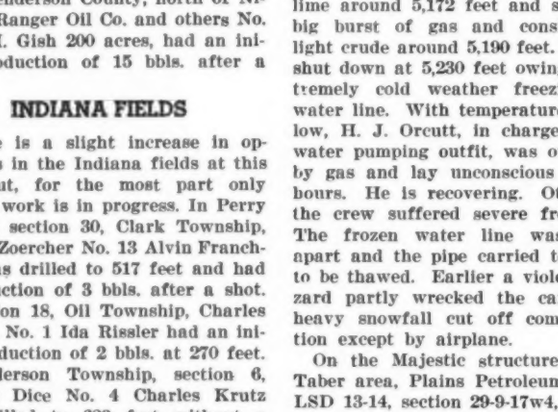
At the close of the year 58,092,000,000 feet of gas had been withdrawn from the Jackson gas field of Mississippi, according to Henry N. Toler, state oil and gas supervisor. Total ultimate recovery of the field is estimated from 110,000,000,000 to 130,000,000,000 feet, and at the present rate of withdrawal the field has a remaining life of from five to seven years.

Oil-Electric Engines

Three oil-electric locomotives were ordered last week by the New Orleans Belt Railway from the Baldwin Locomotive Works, extending the trend to broader use of petroleum in railway transportation.

REPAIR THAT LEAKING LINE AT SMALL COST

MILLER *Jiffy* PIPE CLAMP



JIFFY PIPE CLAMPS of simple two-piece hinged construction quickly and effectually stop leaks in water, gas, oil or steam lines. Use any old piece of inner tube or belting for a gasket, clamp on the JIFFY, drive the wedge home and the job is done.

Made of malleable iron of many times the strength needed, JIFFY Pipe Clamps can be used for either temporary or permanent repairs, and when used as a temporary repair the JIFFY Clamps can be used again and again without replacing any new parts.

KEEP ASSORTED SIZES ON HAND FOR EMERGENCIES.

Size of pipe	2-inch		3-inch	4-inch
Length of clamp	4-in.	8-in.	6-inch	6-inch
Price each	$1.00	$1.75	$2.00	$2.40

Order through your supply store or direct—we pay shipping charges on orders of one dozen or more clamps.

MANUFACTURED BY THE MAKERS OF THE MILLER SAND PUMP

MILLER SAND PUMP CO.

General Offices and Shop, Box 4516

OKLAHOMA CITY, OKLAHOMA

Branch Shops and Offices Sapulpa, Oklahoma, and Kilgore, Texas.

Summary of Operations, All Fields, December

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Penn. Grade fields	421	1,294	46	79
Lima	3	1	0	2
Central Ohio	64	195	10	46
Indiana	27	66	12	8
Illinois	0	0	0	0
Kentucky	33	532	15	0
Michigan	50	4,356	18	10
Kansas	211	138,737	60	9
Oklahoma	226	80,142	50	12
North Central Texas	177	13,783	83	1
West Texas	140	91,204	10	2
Texas Panhandle	56	22,747	2	11
East Texas	148	5,100	6	0
East Central Texas	48	6,546	8	0
East Texas Border	45	19,115	2	2
Gulf Coast, Texas	91	31,551	16	4
Southwest Texas	215	39,490	57	5
North Louisiana	41	4,150	13	12
Gulf Coast, Louisiana	28	6,105	12	0
Arkansas	6	1,281	2	0
Mississippi	1	0	1	0
Montana	20	1,014	2	3
Wyoming	21	3,808	8	2
Colorado	3	1,920	2	0
New Mexico	36	20,141	3	2
Utah	2	15	1	0
Total Dec.	2,113	493,293	439	210
Total Nov.	2,235	457,877	440	241
Difference	122	35,416	1	31

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Penn. Grade fields	86	425	511
Lima	6	31	37
Central Ohio	57	177	234
Indiana	9	36	45
Illinois	2	10	12
Kentucky	20	55	75
Michigan	81	124	205
Kansas	71	287	358
Oklahoma	55	479	534
North Central Texas	56	210	266
West Texas	100	336	436
Texas Panhandle	21	119	140
East Texas	42	58	100
East Central Texas	31	62	93
East Texas Border	12	64	76
Gulf Coast, Texas	33	130	163
Southwest Texas	88	181	269
North Louisiana	21	92	113
Gulf Coast, Louisiana	8	84	92
Arkansas	9	34	43
Mississippi	4	12	16
Alabama	0	2	2
Florida	0	4	4
Montana	3	49	52
Wyoming	6	50	56
Colorado	4	31	35
New Mexico	6	130	136
Utah	1	7	8
Nebraska	0	4	4
Total Dec.	832	3,283	4,115
Total Nov.	786	3,332	4,118
Difference	46	49	3

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Atoka	0	0	0	0	0	4	4
Beckham	0	0	0	0	0	2	2
Caddo	1	0	1	0	0	8	8
Carter	11	658	3	0	2	14	16
Choctaw	0	0	0	0	0	1	1
Cleveland	5	14,234	0	0	1	10	11
Coal	3	236	1	1	1	6	7
Comanche	0	0	0	0	0	7	7
Cotton	1	0	1	0	0	2	2
Creek	8	367	1	1	6	27	33
Garfield	1	0	1	0	0	1	1
Garvin	6	687	1	0	1	10	11
Grady	0	0	0	0	1	2	3
Grant	0	0	0	0	0	1	1
Greer	0	0	0	0	0	1	1
Harmon	0	0	0	0	0	1	1
Hughes	9	143	3	4	3	14	17
Jackson	1	25	0	0	0	4	4
Jefferson	3	117	1	0	0	5	5
Johnston	0	0	0	0	0	1	1
Kay	1	0	1	0	1	3	4
Kiowa	1	0	1	0	1	10	11
Latimer	0	0	0	0	0	1	1
Le Flore	0	0	0	0	0	2	2
Lincoln	5	335	2	1	1	5	6
Logan	2	279	1	0	2	11	13
Love	0	0	0	0	0	3	3
Marshall	1	0	1	0	0	6	6
McIntosh	1	0	1	0	0	2	2
Murray	0	0	0	0	0	2	2
Muskogee	2	5	1	0	1	12	13
Noble	3	2,260	0	0	1	3	4
Okfuskee	28	8,560	3	0	4	29	33
Oklahoma	14	19,878	3	0	3	33	36
Okmulgee	7	115	1	2	3	20	23
Osage	27	3,652	5	2	5	27	32
Pawnee	1	0	1	0	0	8	8
Payne	1	20	0	0	0	1	1
Pittsburg	0	0	0	0	0	2	2
Pontotoc	45	24,868	4	0	8	96	104
Pottawatomie	2	249	0	0	2	17	19
Pushmataha	0	0	0	0	0	1	1
Seminole	25	3,178	8	1	6	34	40
Stephens	9	149	2	0	0	12	12
Tillman	0	0	0	0	0	4	4
Texas	0	0	0	0	0	1	1
Tulsa	4	127	2	0	1	8	9
Wagoner	0	0	0	0	1	4	5
Washita	0	0	0	0	0	1	1
Ttl. Dec.	226	80,142	50	12	55	479	534
Ttl. Nov.	178	54,301	48	11	62	452	514
Difference	48	25,841	2	1	7	27	20

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Barber	1	0	1	0	1	2	3
Barton	14	15,750	2	0	7	27	34
Butler	9	1,032	4	0	1	9	10
Chase	0	0	0	0	0	1	1
Chautauqua	7	1,895	3	0	3	7	10
Clark	0	0	0	0	0	1	1
Coffey	6	414	1	0	0	4	4
Cowley	9	2,992	5	1	2	8	10
Decatur	0	0	0	0	0	1	1
Edwards	0	0	0	0	1	1	2
Elk	1	500	0	0	1	2	3
Ellis	10	8,154	4	0	3	12	15
Ellsworth	2	1,721	0	0	3	5	8
Grant	0	0	0	0	0	1	1
Greenwood	5	3	4	0	1	9	10
Harvey	6	3,905	1	0	2	10	12
Haskell	0	0	0	0	1	0	1
Kearny	0	0	0	0	1	1	2
Kingman	0	0	0	0	1	1	2
Lincoln	1	0	1	0	0	0	0
Logan	0	0	0	0	0	1	1
Lyon	0	0	0	0	0	1	1
Marion	3	337	2	0	0	3	3
McPherson	11	9,072	2	1	2	11	13
Meade	0	0	0	0	1	0	1
Mitchell	0	0	0	0	0	1	1
Ness	1	0	1	0	0	1	1
Osborne	0	0	0	0	0	1	1
Pawnee	1	0	1	0	0	1	1
Pratt	0	0	0	0	0	2	2
Reno	12	7,566	2	1	9	22	31
Rice	43	36,543	8	0	10	39	49
Rooks	2	504	1	0	0	7	7
Rush	3	1,292	1	1	3	5	8
Russell	33	39,094	3	0	11	47	58
Saline	0	0	0	0	1	1	2
Scott	1	0	1	0	0	0	0
Sedgwick	3	487	2	0	0	6	6
Seward	1	0	1	0	0	0	0
Sheridan	0	0	0	0	0	1	1
Smith	1	0	1	0	0	0	0
Stafford	4	1,429	3	0	1	8	9
Stevens	4	0	0	4	1	1	2
Sumner	8	5,524	1	1	1	15	16
Trego	0	0	0	0	1	4	5
Woodson	9	323	4	0	2	7	9
Ttl. Dec.	211	138,737	60	9	71	287	358
Ttl. Nov.	136	84,242	34	3	52	305	357
Difference	75	54,495	26	6	19	18	1

GULF COAST FIELDS

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Ace	0	0	0	0	0	1	1
Amelia	3	793	1	0	1	3	4
Anahuac	5	2,064	0	0	4	6	10
Bay City	0	0	0	0	0	1	1
Batson	1	120	0	0	0	1	1
Big Hill	0	0	0	0	0	1	1
Big Creek	1	0	1	0	0	2	2
Blue Ridge	1	0	1	0	0	3	3
Boling	1	630	0	0	0	3	3
Clay Creek	2	210	0	0	0	2	2
Cleveland	0	0	0	0	0	1	1
Conroe	5	1,862	1	0	1	4	5
Cotton Lake	3	560	1	0	0	3	3
Dickinson	6	1,904	0	1	2	2	4
Esperson	2	172	0	0	1	1	2
Fannett	0	0	0	0	0	1	1
Fairbanks	0	0	0	0	0	1	1
Five Corners	0	0	0	0	0	1	1
Greta	5	2,263	0	0	2	3	5
Goose Creek	1	0	1	0	0	0	0
Greens Lake	0	0	0	0	0	1	1
Hankamer	0	0	0	0	0	1	1
Hastings	8	4,547	0	0	4	7	11
Hawkinsville	0	0	0	0	0	1	1
Heyser	4	912	1	0	0	4	4
High-Island	1	416	0	0	0	2	2
Hull	0	0	0	0	0	6	6
Keeran	0	0	0	0	0	1	1
Lockridge	0	0	0	0	0	3	3
Louise	1	312	0	0	0	2	2
Magnet	0	0	0	0	0	2	2
Manvel	3	600	2	0	1	2	3
Markham	1	0	1	0	1	3	4
Nome	2	491	0	0	0	3	3
Mykawa	0	0	0	0	1	0	1
Old Ocean	0	0	0	0	0	1	1
Orchard	1	235	0	0	0	2	2
Pickett Ridge	0	0	0	0	0	1	1
Placedo	6	1,232	0	0	2	5	7
Raccoon Bend	4	954	1	0	0	2	2
Refugio	0	0	0	0	0	1	1
Silsbee	2	635	0	0	1	1	2
Segno	1	1,128	0	0	0	0	0
South Houston	3	721	0	0	2	2	4
Spanish Camp	1	0	0	1	1	0	1
Thompson	0	0	0	0	0	1	1
Tomball	5	1,272	0	2	1	3	4
Quintana-O'Connor	4	6,154	0	0	2	3	5
Turtle Bay	0	0	0	0	1	2	3
Van Vleck	2	1,124	0	0	0	1	1
West Columbia	0	0	0	0	0	1	1
Withers	1	240	0	0	0	3	3
Misc.	5	0	5	0	5	23	28
Ttl. Dec.	91	31,551	16	4	33	130	163
Ttl. Nov.	116	31,601	22	6	42	125	167
Difference	25	50	6	2	9	5	4

Coastal Louisiana

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Bayou Mallet	0	0	0	0	0	1	1
Bayou Blue	1	0	1	0	0	1	1
Big Lake	1	0	1	0	0	0	0
Bay St. Elaine	0	0	0	0	0	1	1
Black Bayou	1	602	0	0	0	0	0
Caillou Island	0	0	0	0	0	2	2
Cameron Meadows	1	100	0	0	0	3	3
Cankton	1	58	0	0	0	0	0
Charenton	0	0	0	0	0	1	1
Choctaw	0	0	0	0	0	1	1
Darrow	1	0	1	0	0	1	1
Dog Lake	0	0	0	0	0	1	1
Gillis	3	1,250	0	0	0	5	5
Garden Island	0	0	0	0	0	1	1
Hackberry	2	0	2	0	2	5	7
Iowa	1	435	0	0	0	0	0
Jeanerette	0	0	0	0	1	4	5
Jennings	2	754	0	0	1	4	5
Lafitte	0	0	0	0	0	2	2
Lake Barre	0	0	0	0	0	1	1
Lake Hermitage	0	0	0	0	0	1	1
Lake Pelto	0	0	0	0	0	1	1
Leesville	0	0	0	0	0	5	5
New Iberia	1	639	0	0	0	6	6
Port Barre	0	0	0	0	0	1	1
Roanoke	0	0	0	0	0	2	2
St. Martinsville	1	0	1	0	0	0	0
Sorrento	0	0	0	0	0	2	2
Starks	0	0	0	0	0	1	1
Sulphur	3	1,389	1	0	0	2	2
Tepetate	3	852	0	0	1	3	4
Vinton	1	26	0	0	0	0	0
White Castle	0	0	0	0	0	1	1
Misc.	5	0	5	0	0	3	3
Ttl. Dec.	28	6,105	12	0	8	84	92
Ttl. Nov.	41	10,366	11	1	11	88	99
Difference	13	4,261	1	1	2	4	7

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Andrews	4	1,988	0	0	2	9	11
Brewster	0	0	0	0	0	2	2
Coke	0	0	0	0	1	0	1
Crane	6	3,595	1	0	3	29	32
Cochran	0	0	0	0	0	1	1
Crockett	0	0	0	0	1	2	3
Dawson	0	0	0	0	0	1	1
Ector	7	5,572	0	0	3	25	28
Edwards	0	0	0	0	0	1	1
El Paso	0	0	0	0	0	1	1
Fisher	4	1,135	2	0	4	2	6
Gaines	0	0	0	0	0	2	2
Garza	1	0	1	0	0	1	1
Glasscock	2	555	0	0	0	7	7
Hockley	0	0	0	0	0	1	1
Howard	11	2,572	1	0	11	17	28
Hudspeth	0	0	0	0	0	1	1
Jeff Davis	0	0	0	0	0	1	1
Jones	6	1,077	2	0	4	26	30
Kimble	0	0	0	0	1	3	4
Loving	0	0	0	0	0	2	2
Lynn	0	0	0	0	0	1	1
Nolan	0	0	0	0	0	1	1
Pecos	11	5,230	0	0	5	30	35
Presidio	0	0	0	0	2	0	2
Schleicher	0	0	0	0	0	1	1
Scurry	0	0	0	0	0	1	1
Taylor	0	0	0	0	0	3	3
Terrell	0	0	0	0	0	1	1
Terry	0	0	0	0	0	3	3
Tom Green	0	0	0	0	0	2	2
Upton	10	3,774	0	0	11	32	43
Ward	36	33,884	2	1	25	60	85
Winkler	42	31,822	1	1	27	66	93
Yoakum	0	0	0	0	0	1	1
Ttl., Dec.	140	91,204	10	2	100	336	436
Ttl., Nov.	154	108,890	14	3	46	309	355
Difference	14	17,686	4	1	54	27	81

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Agua Dulce	1	0	0	1	2	1	3
Alta Mesa	0	0	0	0	0	1	1
Alta Verde	2	0	2	0	2	0	2
Bentonville	1	0	1	0	0	2	2
Branyon	4	635	0	0	1	4	5
Caesar	1	0	1	0	0	0	0
Carolina-Texas	1	0	1	0	0	0	0
Charamousca	1	0	1	0	0	0	0
Charco Redondo	1	0	1	0	1	0	1
Clara Driscoll	3	720	1	0	0	7	7
Clark	1	0	1	0	1	1	2
Cole	1	0	1	0	0	1	1
Colorado	0	0	0	0	1	0	1
Cosden	0	0	0	0	1	0	1
Cuellar	1	0	1	0	1	0	1
Darst Creek	2	300	0	0	2	3	5
Dirks	0	0	0	0	1	0	1
El Mesquite	0	0	0	0	0	1	1
Escobas	8	365	3	0	1	5	6
Flour Bluff	3	390	0	0	0	6	6
Foley	1	240	0	0	0	0	0
Gas Ridge	0	0	0	0	0	1	1
Govt. Wells	0	0	0	0	2	2	4
Haynes	12	650	0	0	1	8	9
Hilbig	0	0	0	0	1	0	1
Hoffman	3	170	0	1	1	1	2
Ina	0	0	0	0	0	1	1
Jacob	4	75	0	0	2	4	6
Kingsville	1	15	0	0	0	1	1
Kohler	0	0	0	0	0	2	2
Labbe	1	0	1	0	0	0	0
La Blanca	0	0	0	0	0	2	2
Las Albercas	0	0	0	0	1	0	1
Loma Novia	17	4,050	3	0	6	2	8
Loma Vista	1	0	1	0	0	0	0
Lopez	20	6,385	1	1	4	4	8
Los Olmos	0	0	0	0	0	1	1
Lucas	1	0	1	0	0	1	1
Maetz	1	0	1	0	0	0	0
Margo	0	0	0	0	1	0	1
McCampbell	1	310	0	0	1	0	1
McCrory	0	0	0	0	0	1	1
Mercedes	0	0	0	0	0	1	1
N. Pettus	3	140	1	0	1	2	3
Oakville	1	50	0	0	1	0	1
O'Hern	7	4,020	0	0	1	6	7
Pearsall	0	0	0	0	0	2	2
Peters	1	250	0	0	0	0	0
Piedra Lumbre	1	0	0	1	0	1	1
Plummer	1	350	0	0	0	0	0
Plymouth	4	1,180	0	0	1	2	3
Ray	1	120	0	0	0	0	0
Rhode	2	0	2	0	1	0	1
Rio Grande City	0	0	0	0	2	1	3
Samfordyce	2	155	0	0	1	2	3
Sandia	0	0	0	0	1	1	2
Saxet	36	4,840	3	1	9	29	38
Saxet Heights	13	1,920	3	0	5	4	9
Seven Sisters	20	11,280	1	0	5	3	8
Somerset	1	50	0	0	0	0	0
Stratton	0	0	0	0	1	0	1
Taft	3	830	0	0	1	4	5
Von Ormy	0	0	0	0	0	2	2
Voss	1	0	1	0	0	0	0
W. Premont	0	0	0	0	1	2	3
W. Tuleta	1	0	1	0	0	0	0
Misc.	23	0	23	0	23	56	79
Ttl. Dec.	215	39,490	57	5	88	181	269
Ttl. Nov.	285	46,575	62	6	74	200	274
Difference	70	7,085	5	1	14	19	5

EAST CENTRAL AND EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Anderson	2	156	0	0	4	4	8
Angelina	0	0	0	0	1	2	3
Bowie	0	0	0	0	0	4	4
Cherokee	2	0	2	0	1	0	1
Falls	0	0	0	0	0	4	4
Fannin	1	0	1	0	0	3	3
Franklin	4	595	1	0	2	2	4
Freestone	1	0	1	0	0	2	2
Gregg	71	2,509	1	0	13	14	27
Henderson	3	162	2	0	0	1	1
Hopkins	4	1,485	0	0	1	5	6
Hunt	0	0	0	0	0	1	1
Lamar	1	0	1	0	0	0	0
Leon	1	0	1	0	1	0	1
Limestone	0	0	0	0	1	1	2
Nac'doches	1	0	1	0	0	1	1
Navarro	1	5	0	0	0	0	0
Rains	0	0	0	0	0	1	1
Red River	0	0	0	0	1	5	6
Rusk	40	1,583	0	0	15	27	42
Smith	10	258	1	0	5	3	8
Titus	29	4,143	0	0	20	25	45
Upshur	25	750	2	0	8	14	22
Wood	0	0	0	0	0	1	1
Ttl., Dec.	196	11,646	14	0	73	120	193
Ttl., Nov.	210	15,425	13	2	79	164	243
Difference	14	3,779	1	2	6	44	50

NORTH AND CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Archer	26	450	17	0	0	16	16
Baylor	1	0	1	0	0	1	1
Brown	1	0	1	0	0	1	1
Callahan	5	40	4	0	1	11	12
Clay	2	10	1	0	1	1	3
Coleman	1	23	0	0	2	5	7
Comanche	0	0	0	0	0	1	1
Collin	0	0	0	0	2	3	5
Cooke	17	930	8	0	3	9	12
Denton	0	0	0	0	0	5	5
Eastland	0	0	0	0	0	9	9
Foard	1	175	0	0	0	1	1
Grayson	1	0	1	0	0	4	4
Hamilton	0	0	0	0	0	3	3
Jack	20	7,925	2	0	15	39	54
Johnson	0	0	0	0	0	1	1
McCulloch	0	0	0	0	0	1	1
Montague	7	195	2	0	1	7	8
Palo Pinto	3	0	2	1	0	2	2
Parker	0	0	0	0	0	1	1
Shackelford	16	700	5	0	2	21	23
Stephens	0	0	0	0	1	4	5
Tarrant	0	0	0	0	0	2	2
Throckm'ton	1	0	1	0	1	1	2
Wichita	23	885	9	0	5	16	21
Wilbarger	4	272	1	0	1	5	6
Wise	0	0	0	0	1	2	3
Young	48	2,178	28	0	20	38	58
Ttl. Dec.	177	13,783	83	1	56	210	266
Ttl. Nov.	216	17,088	95	1	59	206	271
Difference	39	3,305	12	0	3	4	5

EAST TEXAS (Border Counties)

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Bowie	0	0	0	0	0	3	3
Cass (Rodessa)	42	19,115	1	0	9	46	55
Harrison	0	0	0	0	0	3	3
Marion	0	0	0	0	1	4	5
Panola	3	0	1	2	1	4	5

Sabine	0	0	0	0	0	1	1
Shelby	0	0	0	0	1	3	4
Total Dec.	45	19,115	2	2	12	64	76
Total Nov.	42	20,849	4	2	8	76	84
Difference.	3	1,734	2	0	4	12	8

*Gas prod.; Panola County, 8,000,000.

Rodessa wells in Cass County gauged by one-hour flow through restricted choke and multiplied by 24.

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Briscoe ...	0	0	0	0	0	1	1
Carson	8	4,327	0	2	1	12	13
Collingsworth ..	0	0	0	0	0	2	2
Deaf Smith	0	0	0	0	0	1	1
Gray	25	11,619	2	1	3	30	33
Hansford ..	0	0	0	0	0	1	1
Hartley ...	0	0	0	0	0	1	1
Hutchinson	11	5,572	0	1	8	51	59
Moore	3	0	0	3	2	8	10
Ochiltree ..	0	0	0	0	1	0	1
Potter	0	0	0	0	2	0	2
Roberts ...	0	0	0	0	0	1	1
Wheeler ..	9	1,229	0	4	4	11	15
Ttl. Dec..	56	22,747	2	11	21	119	140
Ttl. Nov..	51	13,986	4	16	30	131	161
Difference	5	8,761	2	5	9	12	21

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry.	Gas*	Rgs.	Dlg.	Ttl.
Bienville ..	1	0	0	1	0	3	3
Bossier	1	1,210	0	0	2	6	8
Caddo-Rodessa .	7	2,452	0	0	6	14	20
Caddo-Other ...	8	238	3	0	3	17	20
Catahoula .	0	0	0	0	1	0	1
Claiborne ..	2	110	1	0	0	2	2
Concordia ..	0	0	0	0	0	1	1
De Soto ...	1	0	0	1	3	7	10
Franklin ...	1	0	1	0	0	1	1
Grant	2	75	1	0	0	5	5
Jackson	0	0	0	0	0	1	1
LaSalle	1	0	1	0	1	1	2
Lincoln	1	0	1	0	0	0	0
Morehouse .	5	0	0	5	1	2	3
Natchitoches ...	1	0	1	0	0	3	3
Ouachita ...	1	0	0	1	1	1	2
Red River .	3	0	3	0	0	2	2
Richland ..	0	0	0	0	0	1	1
Sabine	2	65	1	0	0	8	8
Tensas	0	0	0	0	0	2	2
Union	3	0	0	3	1	3	4
Webster	1	0	0	1	0	11	11
West Carrol	0	0	0	0	0	1	1
Winn	0	0	0	0	0	2	0
Total Dec.	41	4,150	13	12	21	92	113
Total Nov.	40	11,002	11	7	16	106	122
Difference.	1	6,852	2	5	5	14	9

*Gas production: Bienville, 20,000,000; De Soto, 1,000,000; Union, 41,500,000; Morehouse, 14,000,000; Ouachita, 3,000,000; Webster, 8,000,000.

Rodessa wells gauged by making one-hour flow through restricted choke and multiplying by 24.

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Calhoun ...	0	0	0	0	0	1	1
Clark	0	0	0	0	0	1	1
Cleveland ..	1	0	1	0	0	1	1
Columbia ..	1	0	1	0	0	1	1
Crawford ..	0	0	0	0	0	1	1
Dallas	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Hempstead.	0	0	0	0	1	5	6
LaFayette .	0	0	0	0	0	1	1
Little River	0	0	0	0	0	3	3
Lonoke	0	0	0	0	0	1	1
Miller	0	0	0	0	0	4	4
Nevada	3	1,271	0	0	6	3	9
Ouachita ..	1	10	0	0	0	5	5
Poke	0	0	0	0	0	1	1
Pulaski	0	0	0	0	0	1	1
Union	0	0	0	0	0	1	4	5
Total Dec.	6	1,281	2	0	9	34	43
Total Nov.	6	960	5	0	8	36	44
Difference.	0	321	3	0	1	2	1

ALABAMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl
Houston	0	0	0	0	0	1	1
Washington .	0	0	0	0	0	1	1
Total Dec..	0	0	0	0	0	2	2
Total Nov..	0	0	0	0	0	1	1
Difference..	0	0	0	0	0	1	1

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Hinds	0	0	0	0	0	2	2
LaFayette ..	0	0	0	0	0	1	1
Bolivar	0	0	0	0	0	1	1
Washington .	0	0	0	0	0	1	1
Lauderdale .	0	0	0	0	0	1	1
Simpson	0	0	0	0	0	1	0	1
Claiborne ...	0	0	0	0	0	0	1	1
Jones	0	0	0	0	0	0	1	1
Grenada	0	0	0	0	0	1	0	1
Lamar	0	0	0	0	0	0	2	2
Harrison ...	0	0	0	0	0	0	1	1
Yalobusha ..	0	0	0	0	0	1	0	1
Wilkinson ..	1	0	1	0	0	0	0	0
Kemper	0	0	0	0	0	1	0	1
Perry	0	0	0	0	0	0	1	1
Total Dec..	1	0	1	0	0	4	12	16
Total Nov..	1	0	1	0	0	4	13	17
Difference..	0	0	0	0	0	0	1	1

FLORIDA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Lake	0	0	0	0	0	2	2
Nassau	0	0	0	0	0	1	1
Hillsborough.	0	0	0	0	0	1	1
Total Dec..	0	0	0	0	0	4	4
Total Nov..	0	0	0	0	0	4	4
Difference..	0	0	0	0	0	0	0

ROCKY MOUNTAIN AREA

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Adams	0	0	0	0	0	2	2
Archuleta .	1	1,920	0	0	1	6	7
Boulder ..	1	0	1	0	0	1	1
Kiowa	0	0	0	0	0	1	1
La Plata ..	0	0	0	0	0	2	2
Larimer ..	0	0	0	0	0	2	2
Las Animas	0	0	0	0	0	3	3
Moffat	0	0	0	0	3	2	5
Park	0	0	0	0	0	3	3
Weld	1	0	1	0	0	0	0
Misc.	0	0	0	0	0	9	9
Ttl. Dec..	3	1,920	2	0	4	31	35
Ttl. Nov..	3	1,500	2	0	2	33	35
Difference	0	420	0	0	2	2	0

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Albany ...	1	0	1	0	1	2	3
Big Horn .	1	400	0	0	0	11	11
Carbon ...	1	0	0	1	2	4	6
Converse ..	0	0	0	0	0	3	3
Fremont ..	0	0	0	0	0	3	3
Goshen ...	1	0	1	0	0	0	0
Hot Springs	1	0	1	0	0	0	0
Lincoln ..	0	0	0	0	0	4	4
Niobrara ..	6	3,345	1	0	2	9	11
Park	0	0	0	0	0	2	2
Sublette ..	1	8	0	0	0	0	0
Sweetwater	1	0	0	1	0	0	0
Uinta	1	0	1	0	0	2	2
Washakie .	3	23	2	0	0	5	5
Weston ...	4	32	1	0	1	0	1
Misc.	0	0	0	0	0	5	5
Ttl. Dec..	21	3,808	8	2	6	50	56
Ttl. Nov..	14	3,423	3	2	4	61	65
Difference	7	385	5	0	2	11	9

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Big Horn..	0	0	0	0	0	1	1
Carbon	0	0	0	0	0	4	4
Fallon	0	0	0	0	0	2	2
Fergus	0	0	0	0	0	6	6
Glacier ...	12	944	0	2	1	9	10
Liberty ...	0	0	0	0	0	1	1
Petroleum .	0	0	0	0	0	1	1
Phillips ...	1	0	0	1	0	3	3
Pondera ..	0	0	0	0	1	3	4
Toole	6	70	1	0	1	10	11
Yellowstone	1	0	1	0	0	2	2
Misc.	0	0	0	0	0	7	7
Ttl. Dec..	20	1,014	2	3	3	49	52
Ttl. Nov..	25	496	3	11	1	55	56
Difference	5	518	1	8	2	6	4

Utah

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Emery ...	1	0	1	0	0	1	1
Washington	1	15	0	0	0	3	3
Misc.	0	0	0	0	1	3	4
Ttl. Dec..	2	15	1	0	1	7	8
Ttl. Nov..	1	0	0	1	0	7	7
Difference	1	15	1	1	1	0	1

Nebraska

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Ttl. Dec..	0	0	0	0	0	4	4
Ttl. Nov..	0	0	0	0	0	4	4
Difference	0	0	0	0	0	0	0

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Bernalillo .	0	0	0	0	0	2	2
McKinley .	3	0	3	0	0	7	7
Santa Fe .	0	0	0	0	0	2	2
San Juan .	3	48	0	1	0	4	4
San Miguel	0	0	0	0	0	3	3
Valencia ..	0	0	0	0	0	2	2
Lea	29	21,043	0	1	5	91	96
Eddy	1	50	0	0	1	11	12
Chaves ...	0	0	0	0	1	0	1
Roosevelt .	0	0	0	0	0	2	2
Harding ..	0	0	0	0	0	2	2
De Baca ..	0	0	0	0	0	2	2
Union	0	0	0	0	0	1	1
Ttl. Dec..	36	20,141	3	2	6	130	136
Ttl. Nov..	44	30,890	2	0	14	128	142
Difference	8	14	1	2	8	2	8

PENNSYLVANIA GRADE FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Bradford ..	134	123	0	0	9	72	81
Allegany ..	92	61	0	0	8	43	51
Venango-Clarion ..	22	26	1	0	3	15	18
Butler-Armstrong	9	17	4	1	1	8	9
N.Y.-Penna. Gas	5	0	1	4	8	14	22
S. W. Penna	18	195	6	6	10	41	51
S. E. Ohio	50	299	18	15	15	67	82
W. Virginia	91	573	16	53	32	165	197
Total Dec.	421	1,294	46	79	86	425	511
Total Nov.	444	920	33	82	96	452	548
Difference.	23	374	13	3	10	47	37

CENTRAL OHIO FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Ashland ...	2	0	0	2	3	9	12
Athens ...	15	10	2	12	8	26	34
Coshocton .	0	0	0	0	3	4	7
Cuyahoga ..	1	0	0	1	2	3	5
Delaware ..	0	0	0	0	0	1	1
Fairfield ..	0	0	0	0	0	4	4
Harrison ..	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	2	2
Hocking ..	1	0	0	1	2	4	6
Holmes	4	0	0	4	2	8	10
Huron	0	0	0	0	0	2	2
Knox	1	0	0	1	4	8	12
Licking	3	35	1	0	6	7	13
Lorain	3	0	0	3	5	8	13
Medina	4	0	1	3	2	8	11
Meigs	10	0	2	8	6	16	22
Morgan	3	1	1	1	0	9	9
Perry	5	149	0	1	2	10	12
Portage	0	0	0	0	0	2	2
Richland ..	1	0	1	0	1	2	3
Stark	6	0	0	6	6	21	27
Summit	0	0	0	0	0	5	5
Tuscarawas	2	0	1	1	1	4	5
Wayne	2	0	0	2	2	8	10
Vinton	1	0	1	0	1	5	6
Ttl. Dec..	64	195	10	46	57	177	234
Ttl. Nov..	111	526	29	63	67	143	210
Difference	47	331	19	17	10	34	24

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Allen	0	0	0	0	0	1	1
Darke	0	0	0	0	0	1	1
Hancock ..	1	1	0	0	2	4	6
Hardin ...	0	0	0	0	0	3	3
Fulton	0	0	0	0	0	1	1
Logan	2	0	0	2	0	2	2
Putnam ..	0	0	0	0	1	2	3
Sandusky .	0	0	0	0	1	3	4
Seneca	0	0	0	0	2	7	9
Wood	0	0	0	0	0	5	5
Wyandot ..	0	0	0	0	0	2	2
Ttl. Dec..	3	1	0	2	6	31	37
Ttl. Nov..	10	65	2	5	8	25	33
Difference	7	64	2	3	2	6	4

ILLINOIS FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Boyd	0	0	0	0	1	0	1
Clay	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	2	2
Marion	0	0	0	0	0	2	2
Jackson ..	0	0	0	0	0	1	1
Jasper	0	0	0	0	1	0	1
Washington	0	0	0	0	0	2	2
Wayne	0	0	0	0	0	2	2
Ttl. Dec..	0	0	0	0	2	10	12
Ttl. Nov..	1	0	1	0	0	10	10
Difference	1	0	1	0	2	0	2

KENTUCKY FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Henderson .	2	17	0	0	0	4	4
McLean	8	85	3	0	8	19	27
Johnson ..	0	0	0	0	0	5	5
Ohio	23	430	12	0	10	21	31
Warren	0	0	0	0	0	2	2
Wayne	0	0	0	0	2	4	6
Ttl. Dec..	33	532	15	0	20	55	75
Ttl. Nov..	33	676	8	1	23	44	67
Difference	0	144	7	1	3	11	8

INDIANA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Daviess ...	2	0	1	1	1	3	4
Decatur ..	1	0	0	1	1	2	3
Delaware ..	1	0	0	1	0	1	1
Gibson	3	8	1	1	0	2	2
Hancock ..	1	0	0	1	1	0	1
Harrison ..	0	0	0	0	0	1	1
Jay	3	0	1	2	0	2	2
Knox	1	0	1	0	1	4	5
Perry	3	0	3	0	2	4	6
Pike	5	5	4	0	2	6	8
Randolph..	0	0	0	0	0	1	1
Ripley	1	0	0	1	1	0	1
Shelby	0	0	0	0	0	1	1
Spencer ...	1	4	0	0	0	4	4
Vanderburgh ..	3	14	1	0	0	3	3
Vigo	2	35	0	0	0	2	2
Ttl. Dec..	27	66	12	8	9	36	45
Ttl. Nov..	14	45	6	6	5	29	34
Difference	13	21	6	2	4	7	11

MICHIGAN

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Alcona	0	0	0	0	1	0	1
Allegan ..	0	0	0	0	1	1	2
Alpena	0	0	0	0	1	0	1
Arenac	2	0	2	0	2	16	18
Bay	0	0	0	0	1	0	1
Chippewa..	0	0	0	0	1	0	1
Clare	1	0	1	0	0	3	3
Clinton ...	0	0	0	0	1	1	2
Gladwin ...	4	342	1	0	3	7	10
Gratiot ...	8	0	2	6	6	6	12
Hillsdale ..	1	0	1	0	0	1	1
Huron	0	0	0	0	0	2	2
Ingham	0	0	0	0	2	0	2
Ionia	0	0	0	0	1	0	1
Isabella ..	5	1,090	3	0	5	25	30
Kent	0	0	0	0	1	1	2
Lake	0	0	0	0	1	0	1
Lenawee ..	0	0	0	0	2	1	3
Livingston.	1	0	1	0	1	1	2
Mackinac .	0	0	0	0	0	1	1
Macomb ..	0	0	0	0	1	1	2
Manistee ..	0	0	0	0	0	1	1
Mason	0	0	0	0	1	0	1
Mecosta ..	3	0	2	1	4	3	7
Midland ..	4	490	0	0	7	11	18
Missaukee .	0	0	0	0	0	2	2
Monroe	0	0	0	0	1	3	4
Montcalm..	7	1,883	1	1	11	11	23
Muskegon .	3	0	1	2	6	5	13
Newaygo .	0	0	0	0	1	0	1
Oceana	0	0	0	0	2	0	2
Ogemaw ..	8	551	0	0	11	12	23
Osceola	0	0	0	0	2	1	3
Otsego	0	0	0	0	0	1	1
Ottawa	0	0	0	0	1	0	1
Roscommon	0	0	0	0	0	1	1
Saginaw ..	3	0	3	0	1	1	2
St. Clair ..	0	0	0	0	1	1	2
St. Joseph.	0	0	0	0	1	0	1
Shiawassee.	0	0	0	0	0	1	1
Washtenaw	0	0	0	0	0	1	1
Wayne	0	0	0	0	0	2	2
Ttl. Dec..	50	4,356	18	10	81	124	205
Ttl. Nov..	57	3,921	27	11	74	119	193
Difference	7	435	9	1	7	5	12

Oil-Electric Buses

NEW YORK.—Nineteen of 27 new combination oil-electric powered motor buses have been placed in service in West Orange and Newark, N.J., marking a departure in prime movers in the transportation field. The combination oil-electric power unit was developed by General Motors Corp. and Public Service Coordinated Transport which is the first transportation utility to install the new equipment.

Significance of the newly developed oil-electric powered buses to the oil industry lies in the fact commercial acceptance of the units is another step toward greater consumption of petroleum. If the buses prove as serviceable as builders anticipate their adoption is forecast on other lines previously dependent on electricity.

A bureau of census preliminary report recently issued in Washington on condition of motor bus transportation at the end of 1935 discloses that 19,182 vehicles were in regular service at that time. Out of the total 5,352 units were engaged in interstate business making runs ranging up to transcontinental trips. Expenses for the 19,182 buses, exclusive of depreciation, were $78,743,000 out of which about $20,000,000 went for fuel alone.

Cosden Reorganization

J. S. Cosden, has headed a stockholders' reorganization committee acting for both preferred and common share owners in bankruptcy proceedings under 77-B, will in the future represent only preferred holders. Serving with Mr. Cosden on the preferred stockholders' committee will be W. Rhinelander Stewart and Frederick M. Mayer, Jr. M. E. Callard, 730 Fifth Avenue, New York, is the new secretary of the committee. Mr. Cosden's committee has taken the action, according to a letter sent to preferred and common holders, because it feels that each class of stock should be independently represented in view of the differences of opinion indicated by the formation of other common and preferred stockholders' committees.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Associated Oil Co., No. 1 Capitan, Santa Barbara Co.	2- 4-30	2,465	P.B. 2,100
Barnsdall-Rio Grande, No. 7 Elwood, Santa Barbara	15- 4-29	3,512	P.B. 2,975
Bush Oil Co., No. 3 Santa Maria, Santa Barbara Co.	30-10-33	4,695	flow 1,500 b.d.
Shaffer, W. D., No. 1 Santa Maria, Santa Barbara Co.	9- 9-33	3,465	sd. sh. drlg.
Macrate, A. N., No. 2 Santa Maria, Santa Barbara Co.	26-10-34	2,831	sd. sh. drlg.
Echo Oil Co., No. 1 Santa Maria, Santa Barbara Co.	23-10-34	3,449	cleaning out
Union Oil Co., No. 12 Santa Maria, Santa Barbara Co.	24-10-34	3,803	sd. sh. drlg.
Union Oil Co., No. 13 Santa Maria, Santa Barbara Co.	24-10-34	2,492	dry; abd.
Petrol Corp., No. 1 Gato Ridge, Santa Barbara Co. ..	9- 8-32	2,041	hd. sh. drlg.
Todos Santos, No. 1 Gato Ridge, Santa Barbara Co. ..	4- 8-32	1,499	sd. sh. drlg.
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co. ..	25-10-35	8,021	cleaning out
Nine Springs Oil Co., No. 1 Los Olivos, Santa Barbara	9- 7-30	3,080	rigging up
Dietzman, J., No. 1 Carpenteria, Santa Barbara Co. ..	8- 4-25	1,025	rigged up
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	640	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	491	hd. sd. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,477	idle
Topa Topa Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	3,200	idle
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	1,680	hd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	606	sd. sh. drlg.
Oil Ridge Oil Co., No. 1 Hopper Canyon, Ventura Co.	6- 4-18	2,774	swab. O.&W.
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co. ...	4- 4-18	4,584	P.B. 3,580
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co. ...	5- 4-18	731	sd. sh. drlg.
Pacific Western Oil Co., No. 7 Temescal, Ventura Co.	4- 4-18	3,015	sd. sh. drlg.
Associated Oil Co., No. 1 Wiley Canyon, Ventura Co.	6- 3-18	3,997	hd. sd. drlg.
St. Louis Oil Co., No. 3 Ojai, Ventura Co.	13- 4-24	281	hd. sd. drlg.
Vaca Oil Co., No. 1 Oxnard, Ventura Co.	6- 1-21	2,822	rig heater
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	4,552	hd. sd. drlg.
General Pet. Corp., No. 1 Padre Canyon, Ventura Co.	15- 3-24	5,230	sd. sh. drlg.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co. ...	23- 3-24	5,475	br. sh. drlg.
Honolulu Oil Corp., No. 1 South Mountain, Ventura Co.	23- 3-21	6,175	hd. sd. drlg.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	2,790	sd. sh. drlg.
Associated Oil Co., No. 27 Hartman, Ventura Co. ...	22- 3-23	4,520	sd. sh. drlg.
Associated Oil Co., No. 12 McGonigle, Ventura Co. ...	23- 3-23	10,386	sd. sh. drlg.
Associated Oil Co., No. 28 Lloyd, Ventura, Ventura Co.	27- 3-23	5,850	hd. sh. drlg.
Associated Oil Co., No. 78 Lloyd, Ventura, Ventura Co.	27- 3-23	4,695	recmtd. 4,690
Shell Oil Co., No. 89 Taylor, Ventura, Ventura Co. ...	30- 3-23	5,323	sd. sh. drlg.
General Pet. Corp., No. 17 Barnard, Ventura, Ventura	23- 3-23	5,386	reaming
Continental Oil Co., No. 6 San Miguelito, Ventura Co.	24- 3-24	4,600	sd. sh. drlg.
General Petroleum Corp., No. 5 Rincon, Ventura Co.	tideland	2,560	sd. sh. drlg.
Surf Oil Co., No. 4 S.P., Rincon, Ventura Co.	8- 3-24	3,960	P.B. 3,865
Den Petroleum Co., No. 1 Devils Den, Kern Co.	20-25-19	2,290	br. sh. drlg.
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	2,185	hd. sh. drlg.
Long, H. C., No. 1 Devils Den, Kern Co.	20-25-19	960	dry; abd.
Associated Oil Co., No. 8-A-3 Lost Hills, Kern Co. ...	11-26-20	1,205	pump. 262 b.d.
Associated Oil Co., No. 6-L-3 Lost Hills, Kern Co. ...	2-26-20	1,870	pump. 15 b.d.
Welport Oil Co., No. 16 McKittrick, Kern Co.	26-29-21	1,115	O.S. drlg.
Woodward, Hoke, No. 6 McKittrick, Kern Co.	11-30-21	1,317	P.B. 1,167
Peters Royalty Corp., No. 2 McKittrick, Kern Co. ...	32-29-22	1,501	hd. sd. drlg.
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	7,716	sd. sh. drlg.
Belridge Oil Co., No. 12-1 North Belridge, Kern Co..	1-28-20	8,420	O.S. drlg.
Belridge Oil Co., No. 14-35 North Belridge, Kern Co.	35-27-20	6,383	sd. sh. drlg.
Belridge Oil Co., No. 15-35 North Belridge, Kern Co.	35-27-20	8,105	cleaning out
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	2,520	sd. sh. drlg.
Dougan Oil Co., No. 1 Kern Front, Kern Co.	17-28-27	2,052	sd. sh. drlg.
National Oil Co., No. 3 Universal, Kern Front, Kern	11-28-27	1,986	rig. to pump
National Oil Co., No. 4 Universal, Kern Front, Kern	11-28-27	1,570	sd. sh. drlg.
Honolulu Oil Corp., No. 59 Kern Front, Kern Co. ...	8-28-27	2,822	pump. 151 b.d.
Honolulu Oil Corp., No. 88 Kern Front, Kern Co. ...	8-28-27	1,918	sd. sh. drlg.
M. H. Whittier Co., No. 3 Kern Front, Kern Co.	16-28-27	2,787	sd. sh. drlg.
Standard Oil Co., No. 2-9 Kern Front, Kern Co.	9-28-27	2,980	P.B. 2,866
General Pet. Corp., No. 37 Young, Kern Front, Kern	14-28-27	2,000	rig. to pump
Hope Oil Co., No. 1 Kern River, Kern Co.	8-29-28	1,800	gr. sd. drlg.
McManus, Thomas, No. 1 Kern River, Kern Co.	2-29-28	264	O.S. drlg.
Roscoe & Stanley, No. 2 Premier, Kern Co.	29-27-27	1,960	sd. sh. drlg.
Framac Oil Co., No. 3 Premier, Kern Co.	22-27-27	880	sd. sh. drlg.
Jeffries, J. J., No. 1 Premier, Kern Co.	7-27-27	2,253	dry; abd.
Transit Oil Co., No. 1 Glide, Mount Poso, Kern Co. ...	33-27-28	1,791	sd. sh. drlg.
Petroleum Securities, No. 2 Mount Poso, Kern Co. ...	34-27-28	1,670	pump. 25 b.d.
Petroleum Securities, No. 6 Mount Poso, Kern Co. ...	26-27-28	1,564	cmtd. 1,522
Harp, E. J., No. 1 Mount Poso, Kern Co.	27-26-28	1,605	deepening
C. C. M. Oil Co., No. 3 Dorsey, Mount Poso, Kern Co.	26-27-28	1,520	cleaning out
Western Gulf Oil Co., No. 34 Fruitvale, Kern Co. ...	21-29-27	6,012	sd. sh. drlg.
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co. ...	22-29-27	4,875	dry; abd.
Western Gulf Oil Co., No. 36 Fruitvale, Kern Co. ...	22-29-27	3,808	cleaning out
Western Gulf Oil Co., No. 37 Fruitvale, Kern Co. ...	14-28-27	2,561	sd. sh. drlg.
Meridian Oil Co., No. 1 Dixon, Fruitvale, Kern Co. ..	23-29-27	3,061	sd. sh. drlg.
Omar Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,164	P.B. 4,100
Linderman Oil Corp., No. 1 Fruitvale, Kern Co.	28-29-27	4,222	pump. dry
Trico Oil & Gas Co., No. 1 Mountain View, Kern Co.	13-30-28	5,000	redrlg. 4,253
Hancock Oil Co., No. 5 Mountain View, Kern Co. ...	14-30-28	5,380	deepening
Hogan Pet. Co., No. 2 Peters, Mountain View, Kern Co.	5-31-29	6,168	flow. 1,300 b.d.
Hogan Pet. Co., No. 9 Porter, Mountain View, Kern Co.	29-30-29	6,098	pump. water
Buffalo Oil Co., No. 5 Mountain View, Kern Co.	19-30-29	4,740	cmtd. 4,540
Standard Oil Co., No. 3 C. L., Mountain View, Kern Co.	13-30-28	4,854	redrlg. 4,814
Standard Oil Co., No. 3 Mabry, Mountain View, Kern	18-30-28	4,791	sd. sh. drlg.
Mohawk Pet. Co., No. 3 Hood, Mountain View, Kern	30-30-29	8,300	deep test
Hillman & Long, No. 1 Mountain View, Kern Co. ...	34-30-29	4,241	sd. sh. drlg.
Shell Oil Co., No. 2 Bahrenburg, Mountain View, Kern	32-30-29	5,957	C.P. 5,736
Berry Holding Co., No. 4 Edison, Kern Co.	10-30-29	1,926	cleaning out
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,525	rigging up
General Petroleum Corp., No. 1 Arvin, Kern Co.	26-31-29	7,462	P.B. 7,395
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	7,760	sd. sh. drlg.
Associated Oil Co., No. 1 Rio Bravo, Kern Co.	30-29-25	7,721	sd. sh. drlg.
Shamrock Oil Co., No. 6 Round Mountain, Kern Co.	6-28-29	1,567	P.B. 1,561
Shell Oil Co., No. 12 Freeman, Round Mountain, Kern	20-28-29	1,820	rig. to pump
Shell Oil Co., No. 17 Caldwell, Round Mountain, Kern	7-28-29	971	sd. sh. drlg.
California Western Oil, No. 21 Round Mountain, Kern	7-28-29	1,541	sd. sh. drlg.
Trans-Line Oil Co., No. 1 San Emidio, Kern Co. ...	3-10-23	951	idle
Standard Oil Co., No. 9-1 Ten Section, Kern Co.	34-30-26	8,915	P.B. 7,934
Shell Oil Co., No. 34-29 Ten Section, Kern Co.	29-30-26	8,000	O.S. drlg.
Shell Oil Co., No. 78-30 Ten Section, Kern Co.	30-30-26	5,353	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	9,498	hd. sh. drlg.
C. C. M. Oil Co., No. 24-21 Midway-Sunset, Kern Co.	21-32-23	2,700	cleaning out
C. C. M. Oil Co., No. 25-21 Midway-Sunset, Kern Co.	21-32-23	2,180	bailing
C. C. M. Oil Co., No. 1-J Midway-Sunset, Kern Co.	21-32-23	2,095	P.B. 1,739
Alford, J. W., No. 7 Midway-Sunset, Kern Co.	25-12-24	2,701	O.S. drlg.
General Pet. Corp., No. 172 Midway-Sunset, Kern Co.	34-12-24	869	pump. 50 b.d.
General Pet. Corp., No. 32-6 Midway-Sunset, Kern Co.	32-32-24	1,754	sd. sh. drlg.
South Cerritos Oil Co., No. 4 Midway-Sunset, Kern Co.	22-32-23	2,070	rig. to pump
Merritt-Annex Oil Co., No. 3 Midway-Sunset, Kern Co.	25-12-24	2,676	sd. sh. drlg.
Standard Oil Co., No. 28-3-D Midway-Sunset, Kern Co.	3-32-24	4,007	pump. 49 b.d.
Standard Oil Co., No. 216-33-D Midway-Sunset, Kern	33-32-24	2,797	sd. sh. drlg.
Gibson Oil Co., No. 4 O'Brian, Midway-Sunset, Kern	6-11-23	2,753	sd. sh. drlg.
Goldman, Frank, No. 5 Midway-Sunset, Kern Co. ...	22-32-23	1,563	sd. sh. drlg.
McGray, Robert, No. 1 Midway-Sunset, Kern Co. ...	22-32-23	2,070	sd. sh. drlg.
McGray, Robert, No. 2 Midway-Sunset, Kern Co. ...	22-32-23	2,250	O.S. drlg.
Surprise Oil Co., No. 6 Midway-Sunset, Kern Co. ...	36-32-23	1,285	sd. sh. drlg.
Union Oil Co., No. 4 Williams, Midway-Sunset, Kern	22-32-23	971	sd. sh. drlg.
Oil Incorporated, No. 1 Midway-Sunset, Kern Co. ...	7-11-23	1,740	pump. 180 b.d.
Oil Producers, Inc., No. 1 Midway-Sunset, Kern Co. ..	7-11-23	2,741	sd. sh. drlg.
Quality Oil Co., No. 2 Cypress, Midway-Sunset, Kern	22-32-23	1,985	will deepen
St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co. ..	22-32-24	3,730	P.B. 3,645
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co. ...	33-11-19	4,989	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co. ...	33-11-19	4,495	rigging up
Reserve Oil & Gas Co., No. 33-3 Tejon, Kern Co. ...	33-11-19	4,431	cmtd. 4,381
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	6,610	sd. sh. drlg.
Buffalo Oil Co., No. 1 Tejon, Kern Co.	5-10-19	1,551	sd. sh. drlg.
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,527	redrlg. 8,381
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,310	gr. sd. drlg.
K. N. D. A., No. 25-20-J Kettleman North, Fresno Co.	20-21-17	8,145	gr. sd. drlg.
K. N. D. A., No. 21-30-J Kettleman North, Fresno Co.	30-21-17	8,849	P.B. 8,832
K. N. D. A., No. 52-30-J Kettleman North, Fresno Co.	30-21-17	8,880	hd. sd. drlg.
K. N. D. A., No. 63-28-J Kettleman North, Fresno Co.	28-21-17	8,480	fish. D.P.
K. N. D. A., No. 83-24-H Kettleman North, Fresno Co.	24-21-16	8,882	C.P. 8,835
K. N. D. A., No. 81-32-J Kettleman North, Fresno Co.	32-21-17	7,830	cmtd. 7,829
K. N. D. A., No. 85-32-J Kettleman North, Fresno Co.	32-21-17	8,183	hd. sd. drlg.
K. N. D. A., No. 47-2-P Kettleman North, Kings Co.	2-22-17	7,530	gr. sd. drlg.
Standard Oil Co., No. 32-19-J Kettleman North, Fresno	19-21-17	8,850	completing
Standard Oil Co., No. 8-19-J Kettleman North, Fresno	19-21-17	6,904	sd. sh. drlg.
Standard Oil Co., No. 85-19-J Kettleman North, Fresno	19-21-17	8,165	sd. sh. drlg.
Standard Oil Co., No. 46-13-H Kettleman North, Fresno	13-21-16	9,518	hd. sd. drlg.
Standard Oil Co., No. 33-33-J Kettleman North, Fresno	33-21-17	5,293	sd. sh. drlg.
Standard Oil Co., No. 54-1-E Kettleman North, Kings	1-23-18	9,675	P.B. 8,260
Standard Oil Co., No. 46-19-V Kettleman Middle, Kings	19-23-19	7,940	sd. sh. drlg.
Associated Oil Co., No. 2 Avenal, Kings Co.	35-23-17	1,029	recmtd. 937
Foster, R. A., No. 1 Carriso, San Luis Obispo Co. ...	2-32-22	5,000	idle
Jergins Trust, No. 1 Indian Knob, San Luis Obispo Co.	26-31-12	1,473	rained out
Calif. Producing Co., No. 1 Pattiway, San Luis Obispo	19-10-24	751	sd. sh. drlg.
United Oil Co., No. 1 Panorama, San Luis Obispo Co.	2-32-21	2,430	sd. sh. drlg.
Union Oil Co., No. 1 Huasna, San Luis Obispo Co. ...	22-32-15	4,210	br. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,310	redrlg. 1,120
Cholame Synd., No. 1 Cholame, San Luis Obispo Co. ..	10-25-15	3,687	cleaning out
Anderson, Amil, No. 1 Cholame, Monterey Co.	15-24-14	1,570	sd. sh. drlg.
Texas Co., No. 1 King City, Monterey Co.	30-19-7	938	rained out
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-20-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	5,580	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	7,132	redrlg. 6,625
Amerada Pet. Co., No. 4 Rio Vista, Solano Co.	23- 4-2	4,476	40,000 m.c.f.
Associated Oil Co., No. 1 Sargent, San Benito Co. ...	5-12-4	4,786	cleaning out
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15-1	4,968	gr. sd. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
F B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporary abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Jennings, E. P., No. 1 Allensworth, Tulare Co. ..... 4-24-23 2,501 bl. sh. drlg.
Seaboard Oil Corp., No. 1 Terra Bella, Tulare Co. ... 16-23-26 2,200 sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Caminol Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	2,940	sd. sh. drlg.
Richfield Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	4,811	sd. sh. drlg.
Richfield Oil Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	1,520	sd. sh. drlg.
Ohio Oil Co., No. 2 El Segundo, Los Angeles Co. ...	7- 3-14	5,791	sd. sh. drlg.
Texas Co., No. 2-1 El Segundo, Los Angeles Co. ...	17- 3-14	1,875	sd. sh. drlg.
Republic Petroleum Co., No. 3 El Segundo, Los Angeles	18- 3-14	3,492	sd. sh. drlg.
Signal Finance Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	squeeze job
C. C. M. Oil Co., No. 18 Torrance, Los Angeles Co. ...	31- 3-14	3,679	milling
Hunt Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,512	sd. sh. drlg.
Nelson Pet. Co., No. 2 Torrance, Los Angeles Co. ...	18- 4-14	3,525	P.B. 3,420
Keystone Consd. Oil Co., No. 1 Redondo, Los Angeles	8- 4-14	3,198	sd. sh. drlg.
McLaren & Associates, No. 1 Palos Verdes, Los Angeles	27- 4-14	3,992	rigging up
Universal Consd., No. 1 Gardena, Los Angeles Co. ...	36- 3-14	7,820	sd. sh. drlg.
Shell Oil Co., No. 47 Reyes, Dominguez, Los Angeles	33- 3-13	5,485	water witch
Shell Oil Co., No. 88 Reyes, Dominguez, Los Angeles	33- 3-13	6,650	cmtd. 6,259
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	3,571	sd. sh. drlg.
Union Oil, No. 48 Callender, Dominguez, Los Angeles	33- 3-13	5,935	sd. sh. drlg.
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	8,541	redrlg. 8,520
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	2,220	sd. sh. drlg.
Union Oil, No. 9 Carson, Dominguez, Los Angeles Co.	33- 3-13	3,655	sd. sh. drlg.
Barnsdall Oil Co., No. 10 Rosecrans, Los Angeles Co.	20- 3-13	6,710	O.S. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	5,920	sd. sh. drlg.
Hildon Oil Co., No. 1 Flood Control, Los Angeles Co.	11- 4-13	4,776	gr. sd. drlg.
Eastern Oil Co., No. 1 Playa Del Rey, Los Angeles Co.	22- 2-15	7,562	idle
Sharby Oil Co., No. 1 Playa Del Rey, Los Angeles Co.	22- 2-15	7,406	fish. D.P.
Vincent Pet. Co., No. 1 Culver City, Los Angeles Co. ..	12- 2-15	6,238	cleaning out
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co. ..	26- 3-17	6,215	O.S. cmtd.
Sunset Oil Co., No. 3 Wilmington, Los Angeles Co. ..	28- 4-13	3,587	pump. 50 b.d.
General Pet. Corp., No. 3 Wilmington, Los Angeles Co.	4- 5-13	1,971	sd. sh. drlg.
Getty Oil Co., No. 1 Wilmington, Los Angeles Co. ...	33- 4-13	2,495	cmtd. 2,476
Royalty Service Corp., No. 1 Wilmington, Los Angeles	5- 5-13	3,371	O.S. drlg.
Gilmore Oil Co., No. 1 Wilmington, Los Angeles Co.	5- 5-13	1,543	sd. sh. drlg.
Honoluiu Oil Corp., No. 1 Puente, Los Angeles Co. ..	15- 2-10	1,108	sd. sh. drlg.
Richfield Oil Co., No. 2 Nutt, Montebello, Los Angeles	5- 2-11	5,485	fish. D.P.
Richfield Oil, No. 1 Estrada, Montebello, Los Angeles	5- 2-11	3,143	cleaning out
Honoluiu Oil Corp., No. 1 Montebello, Los Angeles Co.	14- 2-12	3,750	sd. sh. drlg.
Hobbs Pet. Corp., No. 1 Long Beach, Los Angeles Co.	29- 4-12	2,994	cmtd. 2,920
Clayton, G. L., No. 1 Long Beach, Los Angeles Co. ...	32- 3-12	2,403	sd. sh. drlg.
Hathaway, No. 2 Fulton, Santa Fe Springs, L. Angeles	6- 3-11	4,650	P.B. 4,050
Union Oil Co., No. 100 Santa Fe Springs, Los Angeles	6- 3-11	8,710	sd. sh. drlg.
General Pet., No. 43-C Santa Fe Springs, Los Angeles	5- 3-11	3,594	sd. sh. drlg.
Sibert Oil Co., No. 1 Santa Fe Springs, Los Angeles	31- 2-4	4,802	cleaning out
Julian & Criswell, No. 1 Walnut, Los Angeles Co. ...	5- 2-9	1,350	idle
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	553	sd. sh. drlg.
Cayton, N. H., No. 1 Whittier, Los Angeles Co.	22- 2-11	751	pump. 10 b.d.
Dunlap, D. D., No. 4 Huntington, Orange Co.	2- 6-11	3,888	pump. 70 b.d.
Dunlap Trust, No. 1 Huntington, Orange Co.	2- 6-11	3,993	pump. 75 b.d.
Terry, George, No. 2 Crane, Huntington, Orange Co. ..	2- 6-11	3,975	C.P. 3,850
Petroleum Co., No. 4 Huntington, Orange Co.	2- 6-11	3,944	flow. 480 b.d.
Car Fad Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	3,879	P.B. 3,650
Hammil Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	5,155	fishing
Texas Co., No. 1 V. M., Huntington, Orange Co.	34- 5-11	3,901	deepening
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	3,530	sd. sh. drlg.
South Basin Oil Co., No. 94 Huntington, Orange Co. ..	2- 6-11	3,380	redrlg. 2,997
Elliott Oil Co., No. 1 Huntington, Orange Co.	34- 5-11	4,066	P.B. 3,922
M. F. K. Oil Co., No. 1 Huntington, Orange Co.	2- 6-11	2,990	sd. sh. drlg.
Lucky Strike Oil Co., No. 7 Huntington, Orange Co...	2- 6-11	3,705	reaming
Pan-Coast Oil Co., No. 1 Huntington, Orange Co. ...	34- 5-11	3,886	sd. sh. drlg.
Richfield Oil Co., No. 10 Fidelity, Huntington, Orange	34- 5-11	3,974	redrlg. 3,790
Richfield Oil Co., No. 1 Community, Huntington, Orange	34- 5-11	3,125	redrlg. 2,198
Richfield Oil Co., No. 1 Crowell, Huntington, Orange	34- 5-11	4,650	fishing
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	4,342	fish. bailer
Standard Oil Co., No. 2-5 East Coyote, Orange Co. ...	22- 3-10	4,700	completing
Oil Conservation Co., No. 1 East Coyote, Orange Co.	17- 3-9	2,814	idle
Wilbur, V. R. G., No. 1 East Coyote, Orange Co.	20- 3-9	3,095	idle
Graham & Loftus, No. 1 East Coyote, Orange Co.	18- 3-9	3,965	sd. sh. drlg.
Associated Oil Co., No. 52 East Coyote, Orange Co. ...	18- 3-9	3,487	will redrl.
Bartholomae Oil Co., No. 3 East Coyote, Orange Co.	22- 3-10	4,440	sd. sh. drlg.
West Coast Ref. Co., No. 1 Santa Ana, Orange Co. ..	25- 3-9	2,836	sd. sh. drlg.
Bachman Pet. Co., No. 1 Richfield, Orange Co.	29- 3-9	2,986	reaming
Union Oil Co., No. 29 Chapman, Richfield, Orange Co.	30- 3-9	5,610	cleaning out
Union Oil Co., No. 39 Chapman, Richfield, Orange Co.	29- 3-9	3,785	sd. sh. drlg.
Union Oil Co., No. 40 Chapman, Richfield, Orange Co.	29- 3-9	3,493	sd. sh. drlg.
Union Oil Co., No. 41 Chapman, Richfield, Orange Co.	29- 3-9	3,171	sd. sh. drlg.
Union Oil Co., No. 42 Chapman, Richfield, Orange Co.	29- 3-9	3,188	sd. sh. drlg.
Standard Oil Co., No. 2-11 Kraemer, Richfield, Orange	30- 3-9	4,710	C.P. 4,182
Standard Oil Co., No. 2-24 Kraemer, Richfield, Orange	32- 3-9	3,800	swabbing
Equitable Pet. Co., No. 1 Wildcat, San Bernardino Co.	11-10-5	2,815	bd. sd. drlg.

KANSAS

Week Ending January 16 (Descriptions are East unless marked otherwise)

Barton County

D. R. Buchanan et al No. 1 J. Schartz, Sr., NW NW NE sec. 20-19-11w. Sil. 3,405 ft.; S.D.O. 3,465 ft.

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. Anhy. 785 ft.; S.D. 2,856 ft.

Duwe & Brouk No. 1 Baker, NE SE SW Sec. 16-17-13w. S.D. 2,915 ft.

Freeborn et al No. 1 Sooy, NW NW NE sec. 27-18-12w. S.D. 200 ft.

Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. Spudded and S.D.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. 10-in. 1,940 ft.; drlg. 2,025 ft.

Minnehoma Oil & Gas Co. No. 1 Smith, NW NW NE sec. 20-18-13w. Sil. 3,331 ft.; T.D. 3,362 ft.; D.&A.

S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. R.U.S.T.

Butler County

Cox & McGinnis No. 1 Faulders, SW SW NE sec. 27-25-3e. Drlg. 1,680 ft.

Ralph Wixson et al No. 1 Coulter, NW SW NE sec. 3-27-7. Base K.C. 2,242 ft.; L. 2,775 ft.; 11 B.W. 2,805 ft.; drlg. 3,008 ft.; S.W.

Chase County

Propp et al No. 1 Fromm, SE cor. sec. 29-18-9e. Fsg. 2,440 ft.

Chautauqua County

Miller et al No. 1 Wininger, NE cor. sec. 2-35-9. Drlg. 200 ft.

Sagamore Oil Co. No. 1 Kingston, NE NE NW sec. 17-32-10. Drlg. 400 ft.

Cowley County

C. H. Cross No. 1 Cook, SW cor. sec. 6-32-6. 6-in. 2,434 ft.; H.F.W. 2,635 ft.; drlg. 2,670 ft.

Simpson Oil Co. and Stanolind O. & G. Co. No. 1 Weigle, SW SW NE sec. 18-31-6. Drlg. 2,230 ft.

Earl Wakefield et al No. 1 Knapp, SW SW NW sec. 2-34-5e. 50,000 ft. gas at 585-600 ft.; drlg. 1,450 ft.

Decatur County

Winkler & Koch No. 1 Vessey, C NW SE sec. 26-3-26w. Drlg. 2,330 ft.

Edwards County

Stanolind O. & G. Co. et al No. 1 Donovan, C SE SE sec. 14-26-18w. Simpson 4,790 ft.; Sil. 4,872 ft.; C.O. 4,944 ft.

Ellis County

Empire O. & R. Co. No. 1 Hall, SE cor. sec. 2-12-17w. Drlg. 315 ft.

H. Jones Bros. et al No. 1 Phillips, SE SE NW sec. 9-15-17w. K.C. 3,245 ft.; S.S.O.&W. 3,314-17 ft.; H.F.W. 3,445-47 ft.; S.D. 3,493 ft.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; small increase.

Lario O. & G. Co. et al No. 1 Cress, NE cor. sec. 13-11-17w. Topeka 2,655 ft.; Dodge 2,925 ft.; fsg. 2,945 ft.

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. Anhy. 1,440 ft.; U.R. 12-in.

Sunray Oil Co. No. 1 Befort, NE cor. sec. 11-14-20w. S.D. 982 ft.

Ellsworth County

Empire O. & R. Co. No. 1 Brown, SE SE NW sec. 1-17-9w. Sil. 3,257 ft.; cd. 3,-259-69 ft. and 3,279-88 ft., T.D.; no shows; D.&A.

Grant County

Columbian Fuel Co. No. 1 Gray, C SE sec. 3-29-35w. Skidded rig 100 ft. south; R.U.R.

Greenwood County

Hollis et al No. 1 Boone, NW NE NE SW sec. 21-26-12. S.D. 1,130 ft.

Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Spudded.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Fsg. 3,490 ft.

Saco et al No. 1 Guthrie, NE NE NW sec. 8-22-2e. Base L. 3,060 ft.; Hunton 3,175 ft.; H.F.W. 3,185-90 ft.; drlg. 3,-200 ft.

Haskell County

Helmerich & Payne No. 1 Meredith, C SW sec. 10-30-33w. Set 7-in. csg. 2,452 ft.; R.U.S.T.

Kearney County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; T.D. 2,595 ft.; 1,400,000 ft. gas.

Kingman County

Shell Pet. Corp. No. 1 McMichael, C W½ W½ SW sec. 12-27-10w. 10-in. at 251 ft.; W.O.C. at 350 ft.

Lane County

K. C. Bates No. 1 Bates-Nimocks, C NW NE sec. 16-16-28w. Anhy. 2,065 ft.; drlg. 3,250 ft.

Logan County

Rose Spring Drlg. Co. et al No. 1 Wright, C SE SE sec. 12-15-35w. Anhy. 2,330 ft.; Ft. Riley 2,868 ft.; T.D. 3,909 ft.; to skid rig.

Lyon County

Clyde Fred et al No. 1 Bruce, NW cor. sec. 18-18-10. T.D. 2,291 ft.; D.&A.

Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. S.D. 1,110 ft.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. R.U.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. S.D. 2,200 ft.

Ness County

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Set 8-in. csg. 2,869 ft.; U.R. 3,185 ft.

Osborne County

Helmerich & Payne No. 1 Hittinger, C SE SE sec. 2-7s-11w. Sil. 3,930 ft.; lost cir. 3,990 ft.

Pawnee County

Kessler & Thier et al No. 1 Wallace, SE SE NW sec. 16-23-15w. Drlg. 3,130 ft.

Pratt County

H. V. Elwell et al No. 1 Fay, NW NW SE sec. 15-27-14w. Cmt. back to 2,700 ft.; set whipstock.

Reno County

Carlock et al No. 1 Brown Realty Co., NW NW NE sec. 32-22-10w. Rig.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. S.D. 3,825 ft.

Helmerick & Payne No. 1 Benson, NE cor. sec. 5-25-6w. Cellar.

Helmerich & Payne et al No. 1 Evans, NE NE SE sce. 29-24-6w. Loc.

Helmerich & Payne No. 1 Stewart, SE SE NE sec. 16-24-6w. K.C. 2,925 ft.; drlg. 3,075 ft.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. S.D. 2,680 ft.

W. E. Witt et al No. 1 Wright, SE NE NE sec. 9-23-8w. Topeka 2,660 ft.; drlg. 3,076 ft.

Rice County

Buckley No. 1 Bailey, SW SW NW sec. 19-20-6w. Set 12-in. csg. at 125 ft. W.O.C.

Carlock et al No. 1 Deweese, SW NW NW sec. 32-20-7w. Hunton 3,481 ft.; Viola 3,612 ft.; 2 B.W. & S.O. 3,624-30 ft.; Simpson 3,649½ ft. H.F.W. and fsg.

Dickey Oil Co. No. 1 Brothers, SE cor. sec. 1-21-7w. Cong. 3,451 ft.; drlg. 3,-470 ft.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Rig.

Indian Terr. Ill. Oil Co. No. 1 Fossey, SW SW SW NE sec. 31-20-10w. 8-in. 2,622 ft.; drlg. 2,690 ft.

Shell Pet. Corp. et al No. 1 Soeken "A," C NW sec. 10-19-9w. Sil. 3,300-09 ft., T.D.; P. 68 B.O. and 128 B.W.; comp.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. Drlg. 1,940 ft.

Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. 8-in. 2,434 ft.; U.R. at 2,645 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. Spotted pay 3,258-70 ft.; 13 B.O.; T.D. 3,296 ft.

Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Rig.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. S.D. 3,422 ft.

Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-17s-17w. K.C. 3,023 ft.; 2 B.O.P.H. at 3,095-3,101 ft.; set 6-in. at 3,068 ft.

Rush County

S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. Rig.

G. M. Piggott et al No. 1 Maresch, C NW NW sec. 28-19-19w. Anhy. 1,320 ft.; Sil. 4,165-66 ft.; cg.

Schoenfeld & Kitch No. 1 Winget, SE cor. sec. 15-16-16w. K.C. 3,243-45 ft.; T.D. 3,427 ft.; drlg. cmt.

Russell County

El Dorado Refining Co. No. 1 Scott, NW NW NE sec. 17-13-13w. Dodge 2,730 ft.; drlg. 3,005 ft.

Empire O. & R. Co. No. 1 Frederick, SE cor. sec. 18-15-11w. Cong. 3,335 ft.; Sil. 3,391-93 ft.; U.R. 5-in. csg.

Empire O. & R. Co. No. 1 Vaughn, SW cor. sec. 17-14-14w. Rig.

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. Set 10-in. csg. 780 ft. W.O.C.

Getty, Inc., No. 1 Baxter, SE SE NE sec. 8-15-15w. S.D. 200 ft.

Thayer Drlg. Co. and Dee Miller, SW cor. sec. 10-13-15w. Anhy. 780 ft.; K.C. 3,-879 ft.; drlg. 3,015 ft.

Saline County

Brouk et al No. 1 Othelander, NE NW SE sec. 10-16-3w. Viola 3,294 to 3,440 ft. Wilcox 3,493 ft.; H.F.W. 3,505 ft.; Sil. 3,520-25 ft., T.D.; P.B. to 3,320 ft.; acidized; after head, swabbed 27 B.O.&W. in 8 hrs.

Ryan Consd. No. 1 Wuerth, SW SW NW sec. 28-14-2w. S.D. 950 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. R.U.

Scott County

C. R. Blackman et al No. 1 Nolan, NW NW NE sec. 13-19-33w. Loc.

Sheridan County

O. A. Roberts et al No. 1 Corrick, C NW sec. 34-9-26w. Chat 4,440 ft.; drlg. 4,-460 ft.

Stafford County

Empire Ref. Co. et al No. 1 Jordon, SW SW NW sec. 15-25-14w. K.C. 3,540 ft.; pay 3,722-27 ft.; acd. 2,000 gal.; Pot. 575 B.O., 2% wtr.; R.U.R. to D.D.

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. R.U.R.

C. H. Lebow et al No. 1 Wolk, SE SW NW sec. 3-21-12w. K.C. 3,205 ft. (cor.); Cong. 3,486 ft.; Sil. 3,556 ft.; cd. 3,566-68 ft.; no oil.

Skelly Oil Co. et al No. 1 Kipp, SE SE NE sec. 27-25-14w. Shot, 40 qts. 3,817-27 ft.; C.O.

C. E. Skiles et al No. 1 Hughes, SW cor. sec. 12-23-12w. C.O. 3,829 ft.

Stanolind C. & G. Co. No. 1 Rosacker, SW SW NE sec. 5-25-11w. K.C. 3,485 ft.; drlg. 3,835 ft.

Sumner County

Empire O. & R. Co. No. 1 Hoffman, NW NW SW sec. 27-34-1e. Drlg. 3,880 ft.

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Fsg. 3,755 ft.

Hapenny & Green et al No. 1 Evers, SE SE NE sec. 27-31-2. S.D. 519 ft.

Lario O. & G. Co. et al No. 1 Hall, NW SW NW sec. 11-35-1e. 8-in. 3,056 ft.; drlg. 3,205 ft.

Orcott & Stewart No. 1 Newten, SE cor. sec. 21-30-2. O.W.W.D.; S.D. 930 ft.

Rose Spring Drlg. Co. et al No. 1-A Rutter, C NW NW sec. 21-33-2e. Pot. 130 B.O. at 3,229 ft.; T.D. 3,238 ft.; 1,400 ft. W.I.H. in 12 hrs.; P.B. to 3,233 ft.

E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. B.R.R.

Lloyd, Study & Frost et al No. 1 fee, SE cor. sec. 31-34-1e. Miss. 3,678 ft.; RL. 3,820 ft.; set 7-in. csg. at 3,883 ft.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW sec. 34-14-21w. R.U.R.

Central Commercial Oil Co. No. 1 Burkett, C SW sec. 15-11-22w. O.W.W.D. Fsg. at 4,100 ft.

York State Oil Corp. No. 1 Gugler, SW 837-39 ft.; P.B. to 3,832 ft.; acidized; P. 288 B.O. and 170 B.W. in 19 hrs.

Woodson County

Ross & Marshall No. 1 Breaner, SW SW SE sec. 6-26-15. Drlg. 1,080 ft.

Reamer No. 1 Corn, NE cor. sec. 31-24-15 Drlg. 1,706 ft.

OKLAHOMA

Week Ending January 16

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1 Biscoe, SW SW SW sec. 28-8-22w. T.D. 1,310 ft.; S.D.

Cleveland County

Helmerich & Payne, Inc. No. 1 Glenn, C NW NE sec. 6-8-1w. Drlg. 6,594 ft.

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Rig.

Coal County

Carter Oil Co. et al No. 1 Warne, NE NE NW sec. 31-3-9. Wilcox 5,840 ft.; cd. 5,890-95 ft.; odor of sulfur.

Continental Oil Co. No. 1 Breedlove, NW SW SW sec. 24-1-8. T.D. 5,891 ft.; fsg.

Continental Oil Co. No. 1 Daniels, SW NE SW sec. 27-1-9. McLish 6,847 ft.; drlg. 7,032 ft.

Continental Oil Co. No. 1 King, NE SW NE sec. 26-1-8. Wilcox 5,743 ft.; T.D. 5-762½ ft.; P.B. 836 ft. (cor.); F. 20 B.O. in one 30-min. head; P.O.P.

Continental Oil Co. No. 1 W. Kirby, SW SE SW sec. 23-1n-8e. Drlg. 3,619 ft.

Ruwoldt & Couch No. 1 McMillan, SW cor. sec. 10-1s-8. Loc.

Creek County

J. E. Crosbie, Inc. & Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW sec. 28-15-7. Bldg. rig.
M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 2,870 ft.; S.D.
W. J. Sherry No. 1 Childers, SW SW NE sec. 2-15-7. Loc.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Digging pits.

Garvin County

Ellison & Hammond No. 1 Selby, C SE NW sec. 24-2n-3w. Cd. 6,385-92 ft.; S.S. G. at 6,380-85 ft.; drlg. 6,646 ft.
Hayes Drlg. Co. No. 1 Howell, NW SE NW sec. 34-1-1. Rig.

Greer County

Bud Lewis et al No. 1 Webster, SW NE NE NE sec. 7-7-24w. T.D. 2,067 ft.; fsg.
Neff-Godfrey-Andrea No. 1 Melton, SE NW SE sec. 16-3n-22w. Loc.

Hughes County

W. W. Bussett No. 1 Field, C NW SW sec. 11-9-11. S.D.
Carson Oil Co. No. 1 Lyter, NE NW SW sec. 31-8-12. Rig.
R. K. Ellison No. 1 Peters, SE NW SE sec. 8-6-10. Cromwell 4,270 ft.; dry; T.D. 4,301 ft.; S.D.
McAdams & Barnes No. 1 Koch, SW NE NE sec. 1-9-10. T.D. 3,838 ft.; R.U.S.T.
Mid-Western Prod. Co. No. 1 Hill C SE NW sec. 13-9-9. Set 10-in. 1,680 ft.; drlg. ahead.
Southern Oil Co. No. 1 Buck, C NW SW SW sec. 21-8-10. R.U.S.T.
C. J. Wrightsman No. 1 Diamond, NE NE SE sec. 33-9-9. Senora 1,320 ft.; Booch 2,640 ft.; Gilcrease 2,880 ft.; S.O. 2,880-95 ft.; drlg. 3,024 ft.

Kay County

G. A. Brown et al No. 1-A Harris, SW SW NE sec 14-25-1e Rig.
Helmerich & Payne No. 1 Constant, SW SW NE sec. 17-28-2w. Miss. 4,200 ft.; T.D. 4,400 ft.; drill pipe stuck.
Ritz Oil & Gas Co. No. 1 State, NW NE SW sec. 16-29-2w. Rig on ground.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,225 ft.; S.D.
Burns & Moore No. 1 Block, NW NE SW sec. 21-6-16w. S.D. 50 ft.
Hendershot & Wilson No. 1 Perrish, SE SE NW sec. 3-6-15w. H.F.W. 290-310 ft.; D.&A.
McWhirter & Francis No. 1 Padgett, NE NE NW SE sec. 3-5-17w. Drlg. 511 ft.

Latimer County

Cheyenne Oil Co. No. 1 Wilson, C SE SE sec. 15-5-18. T.D. 2,902 ft.; rng. 9-in. csg.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3-22. 10-in. 2,246 ft.; T.D. 2,340 ft.; S.D.

Lincoln County

Anderson-Prichard Oil Corp. No. 1 Colon, C N½ SE SW sec. 28-17-4e. R.U.R.
Fleetborn Oil Corp. No. 1 Turner, NW NW SE sec. 28-17-5. T.D. 3,994 ft.; swab. 40 B.O. and 3 B.W.P.D.
Skelly Oil Co. No. 1 Laughlin, C SE NW sec. 29-17-3e. Set 10-in. csg. 356 ft.; W. O.C.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. 4,958 ft.
Harry Blackstock No. 1 Prince, SE NE SW sec. 11-17-3w. Rig.
Helmerich & Payne et al No. 1 Hasler, NW NW SE sec. 14-16-4w. Cd. from 6,511 ft.; second Wilcox 6,548 ft.; cd. to 6,571 ft.; tested S.W.; rmg. core hole at 6,560 ft.

Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft.; Arbuckle 1,710 ft.; T.D. 1,811 ft.; S.S.O.; S.D.

Noble County

Bailliere & Lindsey et al No. 1 Aetna Life, SE SE NW sec. 1-23-2w. First Wilcox 4,612 ft.; D.S.T. at 4,598 ft.; showed S. W.; second Wilcox 4,658 ft.; T.D. 4,662 ft. in sd.; D.&A.

Okfuskee County

Harvey Oil Co. No. 1 Stewart, NE cor. sec. 28-10-9. Set 10-in. csg. at 61 ft.; S.D.

Osage County

Norbia Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. T.D. 75 ft.; S.D.

Pawnee County

Forest Dev. Corp. No. 1 Otter, NE NW sec. 15-21-5. Base Miss. 3,500 ft. (cor.); Chatt. 3,505 ft.; sd. 3,527 ft.; Simpson chert and dol. 3,529 ft.; drlg. 3,562 ft.

Payne County

H. P. Young No. 1 Jenkins, SE NW SE sec. 4-17-3e. Drlg. 3,480 ft.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Wapanucka 4,490 ft.; T.D. 4,525 ft.; S.D.

Pontotoc County

Caloma Oil Corp. No. 1 Brentz, SE NE SW sec. 4-1-6. S.D. 503 ft.
W. A. Delaney and Boettcher O. & G. Co. No. 2 Alexander, SW NE SW sec. 24-4-7. Old T.D. 3,520 ft.; cd. 4,490-4,500 ft.; salt and sulfur wtr.; to P.B.
E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. Atoka 1,060 ft.; drlg. 1,858 ft.
Ramsey Pet. Co. No. 1 Johnson, NW SW SE sec. 9-3-7. Wtr. sd. 2,422-27 ft.; McLish 2,475 ft.; Dense 2,765 ft.; Wilcox 2,835 ft.; T.D. 2,845 ft.; to P.B.
L. K. Sandback et al No. 1 Whittaker, NW NE SE sec. 31-4-6. Loc.

Pottawatomie County

Mid-Continent Pet. Corp. No. 1 Logan, NE NE SE sec. 31-11-15. Checkerboard 2,740 ft.; T.D. 3,324 ft.; fsg.

Seminole County

Carter Oil Co. et al No. 1 Simpson, SW SW NE sec. 7-8-8. Sd. 1,467-77 ft.; S.O.; Calvin 1,745 ft.; Senora 2,020 ft.; drlg. 2,140 ft.
Okla. Oil Corp. No. 1-A Gaines, NE SW SW sec. 20-6-7. Cellar.
R. M. Purcell No. 1 Gilliland, SE SE SW sec. 24-11-7. Loc.
A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. Rig.
Paul Traugh No. 1 Williams, NE SE NE sec. 22-6-6. Senora 2,347 ft.; T.D. 2,361 ft.; P. 121 B.O. and 3 B.W. in 21 hrs.

Texas County

Allison & Barnhill No. 1 Bingley, SE SE NE sec. 30-2n-18. (Cimmaron Meridian). S.W. at 2,797-2,803 ft.; 400 ft. W.I.H., 2,808 ft. S.D.

Washita County

L. P. McWhirter No. 1 fee, SW cor. sec. 34-8-19w. Drlg. 1,714 ft.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. Drlg. 1,190 ft.

Carter County

Head & Straus No. 1 Simpson & Fell, NW NW SE sec. 5-1s-3w. T.D. 1,480 ft.; S.D.
Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. Mch. on loc.

Choctaw County

Cooper & Branstetter No. 1 Bell, C NW NE sec. 29-6s-17. S.D. at 1,017 ft.

Comanche County

Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4-11w. T.D. 1,845 ft.; rng. 6⅝-in. csg.
C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. T.D. 682 ft.; S.D. for csg. blk.
L. D. Wise No. 1 Cones, SE SE SW sec. 11-1n-10w. T.D. 2,156 ft.; S.D.

Cotton County

Phillips Pet. Co. No. 1 Warren, C NE NE SE sec. 1-5s-13w. T.D. 3,404 ft.; to make chemical test to shut off wtr.

Harmon County

Lloalko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. T.D. 2,980 ft.; S. D.O.

Jackson County

Everett & Morgan No. 1 Dameron, NW SW SW sec. 34-3n-18w. T.D. 301 ft.; D.&A.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. Cellar and pits.
Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 1,282 ft.; S.D. for bits.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. Drlg. 702 ft.

Love County

Amerada Pet. Corp. No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. T.D. 7,363 ft.; P.B. 2,970 ft.; perforated csg. at 1,539-99 ft. and 2,095-2,115 ft.; cmtd. perf.; flwd. 22 bbls. in 24 hrs. and "went dead"; S.D.O. Aug. 4.
W. H. Riddle et al No. 1 Johnson, C SW SE cor. sec. 20-8s-2w. T.D. 4,009 ft.; waiting for tools; will deepen.
Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft. per. csg. 6,542-57 ft.; 40 shots; inc. prod. about 20 bbls.; swb. 65 B.O. first 24 hrs. after perf.

Marshall County

Magnolia Pet. Co. No. 1 Gardner, NE NE NW sec. 34-6s-6e. Drlg. L. 3,017 ft.
Stuart & Taylor No. 1 Chestnut, NE cor sec. 23-8s-5e. O.W.D.D.; T.D. 770 ft.; S.D.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust, C SW NE sec. 10-1s-2e. T.D. 3,203 ft.; S.D. for rotary tools.
J. Ben Russell No. 1 fee, SE SE NW SW sec. 9-2s-3e. T.D. 785 ft.; H.F.W. and S.D. for csg.

Stephens County

Carter Oil Co. No. 1 Harley, C NE NE sec. 24-2s-4w. Cellar and pits.
Franklin & Duncan No. 1 Woolsey, NW NW SE sec. 10-3s-6w. O.W.D.D.; T.D. 1,050 ft.; D.&A.
Jack Cohen No. 1 Pierce, NE NE NW sec. 24-2s-6w. Drlg. 400 ft.
Coline Oil Co. No. 1 Johnson, SW SE NE NE sec. 1-2n-8w. Sd. 6,448 ft.; cd. 6,450-70 ft.; rec. 19 ft. broken sd., dry; T.D. 6,500 ft.; S.D.O.
H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,800 ft.; S.D.
Ed Parson No. 1 Olson, C SW SW sec. 21-2-8w. Tstd. mud, wtr. and S.O.; sd., odor oil and gas 6,856 ft.; T.D. 7,003 ft.; contract depth; S.D.

Tillman County

Indian Terr. Ill. Oil Co. No. 1 Hatler, C SW NE sec. 32-2s-17w. T.D. 5,169 ft.; to P.B. and test shallow showings.
Lynn Oliver No. 1 Rilling, SE SE NW sec. 22-1s-15w. Granite Wash 1,275-78 S.O.; T.D. 1,314 ft. S.D.
Shirley Clum et al No. 1 Moricle, NW NW SE sec. 16-4s-14w. S.O. 2,435-39 ft. T.D.; may test; S.D.

ARKANSAS

Clark County

Pat Carlin et al No. 1 Bierne, NE SE NE sec. 22-10s-12w. Loc.
John G. Wooten No. 1 Z. T. Sparkman, sec. 1-11-20. 7-in. cmtd. 560 ft.; arg. test.

Cleveland County

J. R. Lockhart No. 1 Ida Robertson, SE cor. sec. 36-10-11w. T.D. 3,203 ft.; S.D.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Fsg. D.P. 2,580 ft.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. S.D. 125 ft.
Root Pet. Co. No. 1 D. F. Jones, 330 ft. S and W, NE SW NE sec. 16-13-23. Drlg. 3,512 ft.
Root Pet. Co. No. 1 Lucey, E. Drake, SE SE NW sec. 24-14s-24w. Loc.
Shephert & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. Drk.
W. E. Stewart No. 1 fee, SE NE NE sec. 31-12-23. Fsg. 3,945 ft.

Little River County

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Drlg. 1,100 ft.

Miller County

Harber & Parks No. 1 Dean, NW SE sec. 24-15-26. Cg. 4,384 ft.
Odell Hinson No. 1 Montana Realty Co., 330 ft. S and W NE NW NW sec. 3-17-28. Dropped drill pipe; S.D.; T.D. 5,325 ft.
C. V. Lenz No. 7 Dale, O.W.D.D., sec. 34-15-26. Flw. about 20 B.P.D.; T.D. 4,217 ft.; W.O.S.R.

Nevada County

Benedum & Trees No. 1 Block, NE NE SE sec. 9-14-20. Rg. 3,120 ft.
Benedum & Trees No. 2 C. C. Fincher, SW SW NE sec. 10-14-20. 7-in. set 1,258 ft.; W.O.C.S.
Benedum & Trees No. 4 Grove, SE SW NW sec. 10-14-20. Drk.
Benedum & Trees No. 5 Grove, NE SW NW sec. 10-14-20. T.D. 2,138 ft.; W.O.S.R.
Benedum & Trees No. 6 Grove, SW NE NW sec. 10-14-20. Drk.
Benedum & Trees No. 7 Grove, NW SW NW sec. 10-14-20. Drk.
Benedum & Trees No. 8 Grove, SW SW NW sec. 10-14-20. Drk.
Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. Drk.
J. C. Buckbee No. 1 Wortham, SW SW NW sec. 29-13-21. R.U.
John R. Lewis No. 1 W. Haynie, SW SW NE sec. 5-14-20. Est. 15,000,000 ft. gas; 200 bbls. oil; S.D. 1,169 ft.; W.O.
Steel & Warmack No. 1 Wm. Haynil, SE SE NW sec. 6-14-21. T.D. 1,183 ft.; W. O.S.R.

Ouachita County

Lion Oil Co. No. 1 Blanch Levey, C W½ SW SW sec. 21-15-15. Loc.
Phillips Pet. Co. No. 1 W. Rose, SW NE sec. 27-15-15. T.D. 4,819 ft.; wash to bottom.
J. D. Reynolds No. 2 P. C. Grayson, Lot 4, Blk. 10, Stephens Sur., sec. 21-15-19. H.F.O.; W.O.S.R.; T.D. 1,508 ft.

Pope County

Arkansas-La. No. 1 Smith, sec. 10-8n-21w. T.D. 3,992 ft.; set csg.; W.O.C.S.

Sevier County

C. J. Benkley No. 1 Luther Tabler, NW NE SE sec. 14-10s-29w. Drk.

Union County

Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. R.U. and W.O.
McCreslen Oil Co. No. 4 L. Atkins, SE NW SE sec. 3-18-13. 7-in. cmtd. 3,548 ft.; S.O.; T.D. 3,560 ft.
Fenn-Ark. Corp No. 1 W. N. Raulston, 330 ft. S and E, NW NW SE sec. 12-17-14. Rg. 2,910 ft.
S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo-Rodessa

Ark.-La. Gas Co. No. 2 Teamer, NW SE SW sec. 13-23-16. Cg. 6,040 ft.
J. Edw. Jones No. 2-A Sharp, SW SE sec. 4-23-16. Loc.
J. Edw. Jones No. 3-A Sharp, SW SE sec. 4-23-16. Loc.
J. Edw. Jones No. 1-B Sharp, 297 ft. N, 151 ft. W, C sec. 4-23-16. Drlg. 300 ft.
J. Edw. Jones No. 2-B Sharp, 893 ft. N, 60 ft. W, C sec. 4-23-16. Loc.
Lion Oil Ref. Co. No. 7 Wynn, NE SW sec. 9-23-15. Comp.; gas well; 40,000,000 ft.; T.D. 6,065 ft.
Magnolia Pet. Co. No. 10-A Caddo Lvy. Bd., NE NW sec. 21-23-16. Drlg. 5,089 ft.
Magnolia Pet. Co. No. 11-A Caddo Lvy. Bd., SW cor. sec. 21-23-16. Loc.
Magnolia Pet. Co. No. 12-A Caddo Lvy. Bd., SE cor. sec. 21-23-16. Drlg. 4,237 ft.
Magnolia Pet. Co. No. 7 Foscue, NE cor. sec. 22-23-16. Drlg. 4,265 ft.
R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Drlg. 7,250 ft.
R. W. Norton No. 2 Starke, 660 ft. N and E, SW sec. 16-23-16. 6-in. cmtd. 6,000 ft.; T.D. 6,005 ft.; W.O.C.S.
Phillips Pet. Co. No. 2 Interstate, 330 ft. S and W, NE NW sec. 16-23-15. Comp.; flw. 251 bbls. in 18 hrs.; T.D. 6,123 ft.
Phillips No. 3 Rose McDonald, NE cor. sec. 17-23-15. 7-in. cmtd. 6,133 ft.; T.D. 6,150 ft.; W.O.C.S.
Standard Oil Co. of La. No. 1 J. R. Hardin, 660 ft. N and E, C sec. 16-23-16. Drlg. 5,983 ft.
United Gas No. 6 Brewer Unit, 655 ft. S and E, NW sec. 21-23-16. Cg. 6,005 ft.
United Gas No. 5 fee 674, 655 ft. S and W, C sec. 16-23-16. Drlg. 5,866 ft.
United Gas No. 1-A Mitchell, 656 ft. N and W, SE cor. sec. 17-23-16. Loc.
United Gas No. 3 W. M. Mitchell, NE cor. 112-ac. tr., sec. 20-23-16. Drlg. 5,869 ft.
United Gas No. 1 Stephens, 655 ft. S and W, NE sec. 20-23-16. Drlg. 5,109 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Lide & Greer No. 1 Smelley, 220 ft. N, 160 ft. W, SE SW NE sec. 13-16-5. D.S.T. 5,838-23 ft.; S.W.; cg. 5,925 ft.
McDowell et al No. 1 Locke, NE cor. sec. 9-15-10. Cg. 1,680 ft.
Seaboard No. 1 McGee, 660 ft. N and E, C sec. 3-16-6. Cg. 7,340 ft.

Bossier Parish

Ark.-La. No. 1 W. H. Davis, 660 ft. S, 1,270 ft. E, NW NE NW sec. 8-17-11. Drlg. 4,985 ft.
Arkansas-La. No. 1 R. Hardeman, SE cor. sec. 6-17-11. Loc.
Ark.-La. Gas No. 1 P. Potter, SW sec. 8-17-11. Rg. 4,273 ft.
Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. Loc.
La. Pet. Corp. et al No. 1 Edwards Est., NW SW sec. 5-17-11. 16-in. cmtd. 110 ft.; W.O.C.S.
Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. Loc.
Plain Drlg. Synd. No. 1-B S. H. Bollinger, SE SW NE sec. 36-23-13. R.U.
Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.
Triangle Drlg. Co. No. 1-I Skannal, NE cor. sec. 22-17-12. Drlg. 4,032 ft.
United Gas No. 1 H. G. Freeman, SE cor. sec. 15-17-12. Drlg. 3,360 ft.
United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Loc.
United Gas No. 1-H A. C. Skannal, NE SE sec. 26-17-12. R.U.

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the SE¼ NW¼ Sec. 24, T. 17 S., R. 29 E., forty acres, in the Grayburg Oil and Gas Field, and the E½ E½, NW¼ NE¼, NE¼ NW¼ Sec. 25, N½ NE¼, S½ SW¼ and NW¼ SW¼ Sec. 26, T. 16 S., R. 31 E., N.M.P.M., 440 acres, in the Robinson Field, New Mexico, are offered to the responsible qualified bidder of the highest bonus per acre for lease under section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at 10 o'clock, February 23, 1937. The minimum bid which will be accepted is $25 per acre for the land in Sec. 24 and $1.25 per acre for the land in the Robinson Field. The land in each field will be offered as a single unit but both units may be included in one lease, the drilling, producing, rental and royalty provisions to apply separately to each unit. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease required by section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Caddo Parish

W. D. Chew No. 1-D Levee Bd., NW SE NE sec. 34-21-16. T.D. 1,683 ft.; tstg. S.W.; S.D.; W.O.

Paul Cooper No. 1 Rodgers, NW SW SW sec. 11-20-15. Drlg. 1,982 ft.

Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.

DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. R.U.

Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E, SW cor. SE¼ sec. 11-17-15. Drlg. 8,177 ft.

B. F. Laney No. 1 Taylor, SW SE SW sec. 17-21-14. S.D. 800 ft.; rig rep.

Lawrence Potter No. 1 Head, NE NE sec. 26-21-15. S.D. 2,310 ft.

F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,203 ft.; blg. to test.

Maja Oil Co. No. 1 Hyman, 950 ft. W, 860 ft. N, SE cor. sec. 10-20-15. Drlg.

Maja Oil Co. No. 2 Self, SE NE SE sec. 10-20-15. Loc.

Matt M. Press No. 1 Keller, SE cor. sec. 10-20-15. T.D. 2,255 ft.; W.O.S.R.

Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. Drlg. 1,748 ft.

Simplex No. 10 Youree, NW SW sec. 7-20-14. Junked and abd.; T.D. 1,898 ft.

Stanolind O. & G. Co. No. 8 Christian, SE NW sec. 27-21-15. 6-in. cmtd. 1,423 ft.; W.O.C.S.

Stanolind No. 116 Dillon, SE SE sec. 14-21-15. Drlg.

Stewart No. 1 Morgan, SW NE sec. 10-20-15. Drlg.

Morefield & Prine No. 3 Stokeley, sec. 5-20-16. 6-in. cmt. and perf.; T.D. 957 ft.; W.O.C.S.

J. J. Thompson No. 1 Gamm, NE SW NW sec. 35-21-15. S.D. 1,320 ft.

Caldwell Parish

G. W. Zeigen et al No. 8 La. Cen. Lbr. Co., SE cor. sec. 4-14-2e. 12-in. cmtd. 60 ft.; W.O.C.S.

Catahoula Parish

Balcones Corp. No. 1 T. J. Chisholm, 1,500 ft. N, 2,500 ft. W, SE cor. sec. 19-10-8e. R.U.

Claiborne Parish

Max Hirsch et al No. 1 C. O. Ferguson, 2,640 ft. N, 1,000 ft. E, SW cor. sec. 29-22-6w. Drlg. 4,638 ft.

United Gas et al No. 1 R. Simms, NW cor. sec. 32-20-5w. Cg. 4,421 ft.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. Drk.

Chamberlin et al No. 1 Lanier, 280 ft. N and E, SW NE sec. 29-11-11. Drk.

Fite et al No. 1 Ramsey, sec. 36-11-11. W.O.; S.D. 1,804 ft.

Gulf Ref. Co. No. 36-A Jenkins, SE cor. sec. 2-12-12. Drk.

Peral Oil Co. No. 1 Joyner, SE NW SW sec. 28-11-12. Claim S.O.; 7-in. will be run; T.D. 2,897 ft.

Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. S.D. 1,250 ft.

Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.

S. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. S.D. 3,050 ft.

Vaughn Prod. Co. No. 1 Sample, 330 ft. N and E, SW NE SE sec. 24-11-14. T.D. 4,861 ft.; S.D. fuel.

Grant Parish

Cane River Prod. Co. No. 1 Swope, SW NW sec. 17-9-1e. T.D. 1,609 ft.; W.O.S.R.

Grant Oil Corp. No. 1 Holmes, 300 ft. N, 150 ft. E, SW NE SW sec. 17-9-1e. T.D. 1,609 ft.; W.O.S.R.

Kirby et al No. 1 Maxwell, 150 ft. N, 300 ft. W, SE SW sec. 9-9-1e. Comp.; flw. 15 B.P.D.; T.D. 1,540 ft.

Perry et al No. 1 Barrett, 150 ft. N and W, SE NE SE sec. 17-9-1e. Junked and abd.; T.D. 1,604 ft.

P. W. Tannin No. 1 Kees, SE sec. 18-9-1e. T.D. 1,609 ft.; W.O.S.R.

Morehouse Parish

S. D. Hunter No. 11 Allison, 4,402 ft. E, 2,423 ft. S, NW cor. sec. 1, in sec. 47-20-4e. 5-in. cmtd. 2,180 ft.; W.O.C.S.

Interstate Fee No. 56, NE cor. sec. 27-20-3e. 8-in. cmtd. 805 ft.; W.O.C.S.

LaSalle Parish

Ark Fuel No. 13-B Urania, NW NE NE sec. 18-10-2e. 6-in. cmtd. 1,503 ft.; W.O.C.S.

Ark Fuel No. 14-B Urania, NE cor. sec. 18-10-2e. Loc.

Natchitoches Parish

Natchitoches Oil Co. No. 1 Simpson, sec. 12-7-7. T.D. 2,509 ft.; S.D.

Ouachita Parish

Hope Prod. Co. No. 6 Call, NE cor. sec. 27 of sec. 38-18-3e. Comp.; 3,000,000 ft. gas; T.D. 2,160 ft.

Hope Prod. Co. No. 7 Call, NW cor. sec. 43-19-4e. R.U.

United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. R.U.

Red River Parish

Gulf No. 25 Kennedy, NW cor. sec. 24-13-11. T.D. 2,468 ft.; stdize.

Perla Oil Co. No. 1 DeLong, 330 ft. S and E, C sec. 23-12-10. Drlg. 2,800 ft.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. Drlg. 8,943 ft.

Sabine Parish

Blue Lake Oil Co. No. 1 Delaney & Wheless, NW SW sec. 31-9-13. Arg. to test; T.D. 2,032 ft.

F. G. Cox No. 1 Whitney Corp., C NW NE sec. 8-9-13. Comp.; flw. 10,000,000 ft. gas; T.D. 4,365 ft.; P.B. 5,503 ft.

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. Drlg. 260 ft.

Posey Sisters Oil Co. No. 3 Burkett, NE cor. sec. 10-9-13. S.D. 3,234 ft.

L. Swift No. 1 Long Bell, NW SE SW sec. 11-8-14. T.D. 3,486 ft.; D.&A.

Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Union Parish

Interstate Nat. Gas. No. 61 fee, SE sec. 1-20-3e. 6-in. cmtd. 2,105 ft.

Interstate Nat. Gas Co. No. 62 fee, SE cor. sec. 36-21-3e. 6-in. cmtd. 2,109 ft.

Interstate Nat. Gas No. 16 Grayling, 660 ft. N, 1,375 ft. W, SE cor. sec. 20-21-4e. 6-in. cmtd. 2,128 ft.

So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.

So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.

Webster Parish

Magnolia Pet. Co. No. 5 J. Cox, SW SE sec. 23-21-10. Cg. 8,125 ft.

Ohio Oil Co. No. 1 Bodcaw Lbr. Co., C NE SE sec. 28-21-10. Comp.; flw. 235 bbls. dist. daily; 3,000,000 to 5,000,000 ft. gas; T.D. 8,188 ft.

Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Loc.

Ohio Oil Co. No. 1 R. M. Coyle, NE SE sec. 22-21-10. 7-in. cmtd. 8,189 ft.; T.D. 8,192 ft.; W.O.C.S.

Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2, NW sec. 26-21-10. Loc.

Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Loc.

Red Hawk Oil Co. No. 1 Mayfield, sec. 9-23-9. Fsg. D.S. 2,802 ft.

Standard Oil Co. of La. No. 1 E. Firdecker, 1,320 ft. E, 1,316 ft. S, NW cor. sec. 2-17n-9w. Cg. L. 5,720 ft.

Tide Water No. 1 L. Pipes, NE SE sec. 10-18-10. Cg. 5,471 ft.

United Gas No. 2 Davis, 660 ft. S and E, NW cor. sec. 23-21-10. Drlg. 7,771 ft.

United Gas No. 1 Mixon, SE SW sec. 22-21-10. Fsg. 7,606 ft.

Winn Parish

G. W. Zeigen No. 9 La. Cen. Lbr. Co., SE NE sec. 20-13-1e. R.U.

LEGAL

Call for Bids to Purchase Royalty Oil Accruing to the United States from the Lance Creek, Wyoming, Oil Field. Pursuant to the provisions of Section 36 of the act approved February 25, 1920 (41 Stat. 437), sealed proposals, in duplicate, will be received in the Office of the Secretary of the Interior, Washington, D. C., on or before noon on February 15, 1937, from responsible bidders for the purchase, for a period of three or five years, beginning April 1, 1937, of all royalty oil accruing to the United States from all productive formations from the surface to and including the Basal Sundance from Government lands in the Lance Creek, Wyoming, oil field. For the calendar year 1934 the total Government royalty oil from the Lance Creek field amounted to approximately 10,406 barrels; during 1935 it amounted to approximately 33,664 barrels; and during 1936, by months, it has been approximately as follows: January, 2,988 barrels; February, 3,484 barrels; March, 5,946 barrels; April, 5,917 barrels; May, 4,003 barrels; June, 2,848 barrels; July, 10,944 barrels; August, 6,256 barrels; September, 7,751 barrels; October, 7,334 barrels. The monthly figures listed hereinabove indicate that the average monthly Government royalty production for the period January to October, 1936, inclusive, amounted to approximately 5,747 barrels. During the periods mentioned the range in gravity was from 36 to 47 degrees A. P. I. The approximate gravity of oil from the Dakota sand is 45°, from the upper Sundance sand 38°, and from Basal Sundance sands 47°. Additional information may be obtained from the Director, Geological Survey, Department of the Interior, Washington, D. C., or the Supervisor, Geological Survey, Casper, Wyoming. Bids are invited upon two separate items, as follows: Item 1. All royalty oil for the period beginning April 1, 1937, and ending March 31, 1940. Item 2. All royalty oil for the period beginning April 1, 1937, and ending March 31, 1942. Bids must be in the following form: "For Item —— for the period beginning April 1, 1937, and ending March 31, 19—, (name of bidder) offers a premium of —— cents per barrel above the highest field price for oil of 40° A. P. I. gravity for the Salt Creek field, Wyoming, as published or offered on any basis of tank measurement reported in terms of capacity table of not less than 97 percent by the principal purchaser of oil in said field, or if the highest field price for oil of 40° A. P. I. gravity in Oklahoma and Kansas, as similarly published or offered by at least two of the five principal purchasers of oil be higher than the said price for the Salt Creek field, said premium is offered above said higher price, the applicability of any such price to be determined by the Secretary of the Interior." Delivery of royalty oil will be made on the respective leaseholds without cost to the Government to the successful bidder or for his account. The leases provide that the lessee shall not be required to hold such royalty oil in storage longer than 30 days after the end of the calendar month in which said oil is produced. Payments for the royalty oil are to be made by check or draft drawn to the order of the Commissioner of the General Land Office and transmitted to the Supervisor, Geological Survey, Casper, Wyoming, on or before the last day of each month following the month in which delivery is made. The volume of said royalty oil will be determined in accordance with existing departmental orders and regulations requiring the measurement of Government royalty oil on the basis of 100 percent capacity tables in terms of 42 United States gallons of 231 cubic inches at a temperature of 60 degrees F. Each bidder must submit with his bid a bond in the sum of $750.00 or a certified or cashier's check or draft for that amount, payable to the order of the Secretary of the Interior, as a guarantee that he will, if successful, promptly execute a satisfactory contract and furnish an acceptable bond in the sum of $40,000, conditioned on a full and complete compliance with the terms of the contract. The Secretary of the Interior may accept any bid which in his judgment is most advantageous to the Government, but reserves the right to reject all bids whenever in his judgment the interests of the United States so demand. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly, "Bid on Lance Creek royalty oil." No bid received after the time herein fixed for submitting bids will be considered. (Sgd.) Harold L. Ickes, Secretary of the Interior. December 31, 1936.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Stanolind O. & G. Co. No. 1 Patin, sec. 46-9s-5e. 13⅜-in. csg. 1,514 ft.; drlg. salt 5,027 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 13 State, sec. 17-22s-18e. Cg. sd. rock 3,710 ft.

Bayou Bouillion—Iberville Parish

S. C. Yingling No. 1-A State, sec. 13-9s-8e. T.D. 1,200 ft.

Bayou Mallett—Acadia Parish

Superior Oil Prod. Co. No. 1 Savoie, sec. 47-7s-1e. Top sd. 6,983 ft.; T.D. 6,985 ft.; 7-in. csg. 6,980 ft.; drlg. plug.

Caillou Island—Terrebonne Parish

Texas Co. No. 33 State, sec. 20-23s-20e. T.D. 4,941 ft.; P.B. and S.T.; drlg. sdy. sh. 4,771 ft.

Texas Co. No. 31 State, sec. 20-23s-20e. T.D. 5,154 ft.; I.P. 910 B.P.D.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 2 Laws Realty Co., sec. 30-13s-10e. Drlg. sdy. sh. 4,355 ft.

Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. T.D. 187 ft.; W.O.C.

Choctaw—Iberville Parish

Standard Oil Co. No. 6 Gay, sec. 52-9s-11e. T.D. 4,195 ft.; I.P. 453 B.P.D. through 18/64-in. ck.

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. Drk.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 4,851 ft.; P.D. 4,440 ft.; plugging back.

Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.

Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; rmg.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-2e. Drk.

Humble Oil & Ref. Co. No. 14 Community, sec. 29-10s-2e. Loc.

Humble O. & R. Co. No. 8 Gumble. T.D. 6,272 ft. salt; P.B. 4,071 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 4 State, sec. 5-22s-16e. T.D. 5,342 ft.; sdtrkd. at 5,185 ft.

Four Isle—Terre Bonne Parish

Texas Co. No. 8 State. Drlg. sh. and sd. 6,721 ft.

Fausse Point—Iberia Parish

Texas Co. No. 2 State, sec. 35-11s-8e. 7-in. csg. 6,444 ft.; drlg. sh. 7,141 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 Daharsh, sec. 14-9s-8w. T.D. 7,054 ft.; 7-in. csg. 7,054 ft.

Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. Drlg. sh. 8,032 ft.

Union Sulphur Co. No. 2 Bel, sec. 12-9s-8w. T.D. 6,788 ft.; P.B. 5,271 ft.; sidetracked. T.D. 8,290 ft.; 5-in. csg. 8,282 ft.

Union Sulphur Co. No. 1 McIver, sec. 14-9s-8w. R.U.

Union Sulphur Co. No. 10 Powell, sec. 29-7s-2w. T.D. 7,217 ft.; sdtrkd. at 6,899 ft.; drlg. sh. 6,997 ft.

Union Sulphur Co. No. 11 Powell, sec. 12-9s-2w. Drlg. sdy. sh. 4,485 ft.

Union Sulphur Co. No. 13 State, sec. 12-9s-8w. Drk.

Union Sulphur Co. No. 15 State, sec. 12-9s-8w. Drk.

Hackberry—Cameron Parish

W. T. Burton Oil Co. No. 1 R. L. Lewis, sec. 22-12s-10w. Drlg. sd. 2,413 ft.

Gulf Oil Corp. No. 22 Erwin, sec. 12-12s-10w. T.D. 6,190 ft.; 7-in. csg. 6,190 ft.

Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. Drlg. sdy. sh. 1,479 ft.

Stanolind Oil & Gas Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Drk.

Stanolind O. & G. Co. No. 24-B Gulf Ld., sec. 14-13s-10w. T.D. 6,565 ft.; drill stem stuck; P.B. 3,700 ft.

Stanolind O. & G. Co. No. 1 M. J. Muller, sec. 23-12s-10w. Drlg. sh. 1,366 ft.

Superior Oil Prod. Co. No. 1 C. Hebert Estate, sec. 33-12s-10w. R.U.

Sutton Joint Interest No. 1 Portie, sec. 32-12s-10w. Cg. sh. 3,970 ft.

Texas Co. No. 20 State, sec. 12-12s-10w. Drlg. sh. 6,890 ft.

Union Sulphur Co. No. 42 Walkins, sec. 13-12s-10w. R.U.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 6 Banta, sec. 40-13s-9e. T.D. 6,801 ft; 7-in. csg. 6,861; perf. csg. 6,440-50 ft.; tstg.

Herton Oil Co. No. 4 Carter, sec. 38-13s-9e. Drlg. sh. 1,515 ft.

A. U. Morrison No. 1 Matilda Plantation, sec. 70-13s-9e. Drlg. sh. 3,248 ft.

Philtop O. & G. Co. No. 1 Eaves, sec. 76-13s-9e. Drk.

Jennings—Acadia Parish

Cosmo Pet. Co. No. 5 Jennings Clement, sec. 46-9s-2w. Drlg. sd. 1,498 ft.

Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. T.D. 7,185 ft.; tried to blow-out; drill stem stuck.

Stanolind O. & G. Co. No. 18 Houssiere-Latrelle, sec. 47-9s-2w. Drlg. sd. and shells 4,918 ft.

Superior Oil Prod. Co. No. 1 Iowa-Jennings, sec. 41-9s-2w. Drlg. 50 ft.

Superior Oil Prod. Co. No. 2 Leckcit, sec. 42-9s-2w. Sd. rock 4,692 ft.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. Dig canal.

Texas Co. No. 1 R. C. Milling, sec. 20-17s-24e. T.D. 10,040 ft.; oil sd.; perf. csg. 10,020 ft.; I.P. 1,476 B.P.D. through ⅝-in. ck.; T.P. 1,960 lbs.

Texas Co. No. 6 Rigolettes, sec. 39-17s-24e. Dig canal.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. Drlg. sd. and L. 9,522 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 LaFourche, sec. 11-8s-25e. Drlg. sd. rock 3,763 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. sd. 7,015 ft.

Leesville—Lafourche Parish

Carter-Michael No. 1 E. S. Bernard, sec. 26-21s-22e. Washing to bottom 5,503 ft.

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. Drlg. sdy. sh. 3,487 ft.

Gulf Oil Corp. No. 4 City of New Orleans sec. 25-21s-22e. T.D. 5,945 ft.; drill pipe stuck.

Texas Co. No. 51 Leesville, sec. 34-21s-22e. T.D. 5,047 ft.; I.P. 1,263 B.P.D. through ⅝-in. ck.

New Iberia—Iberia Parish

Wm. Helis No. 5 Bernard, sec. 54-12s-7e. Drlg. sdy. sh. and L. 3,915 ft.

Wm. Helis No. 4 Boliver, sec. 56-12s-7e. R.U.

Wm. Helis No. 4 Bullock & Burke, sec. 25-12s-7e. Drlg. sdy. sh. 3,687 ft.

Wm. Helis No. 3 Sabatier, sec. 54-12s-7e. Abd. 3,133 ft.

Wm. Helis No. 2 Schwing, sec. 56-12s-7e. T. D. 2,451 ft.; twisted off drill stem; P.B. 1,760 ft.; W.O.C.

Kitos et al No. 3 Sealy, sec. 36-12s-7e. 9⅝-in. csg. 874 ft.; drlg. 4,312 ft.; no report.

Texas Co. No. 1 Clementine, sec. 25-12s-1e. T.D. 7,354 ft.; salt; P.B.; sdtrkd 4,090 ft.; T.D. 6,108 ft.; P.B. 5,336 ft.; W.O.C.

Texas Co. No. 3-B Hanzen, sec. 54-12s-7e. Drlg. sdy. sh. 3,800 ft.

Port Barre—St. Landry Parish

Fan American Prod. Co. No. 3 Cormier, sec. 4-6s-5e. Drlg. shale 925 ft.

Roanoke—Jefferson Davis Parish

Humble O. & R. Co. No. 6-B J. W. Devilbiss, sec. 11-9s-4w. Drlg. sandy shale 3,868 ft.

Shell Pet. Corp. No. 6 Kratzer, sec. 13-9s-4w. 10¾-in. csg. 2,454 ft. Coring sh. 9,173 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-14e. T.D. 5,068 ft.; washing to bottom.

St. Martinsville—St. Martin Parish

Continental Oil Co. No. 1-A fee, sec. 11-11s-6e. O.W.D.D.; S.O.; P.B. and sdtrkd.; T.D. 7,985 ft.; P.B. 7,420 ft.; W.O.C.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co. sec. 20-9s-12w. S.D. 6,433 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 839 fee, sec. 19-9s-10w. 10¾-in. csg. 1,010 ft.; T.D. 1,932 ft.; 7-in. csg. 3,923 ft.; running screen.

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. Loc.

Union Sulphur Co. No. 841 fee, sec. 19-9s-8w. T.D. 4,456 ft.; 7-in. csg. 4,436 ft.; P.B. 4,440 ft.; W.O.C.

Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. Drlg. sandy shale 4,100 ft.

Union Sulphur Co. No. 843 fee, sec. 30-9s-10w. Drlg. sh. and L. 4,468 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 9-A Homeseekers Dev. Co., sec. 29-7s-2w. Drlg. sh. 8,028 ft.

Continental Oil Co. No. 10-A Homeseekers Dev. Co., sec. 29-7s-2w. Drlg. lime 7,238 ft.

Continental Oil Co. No. 11-A Homeseekers Dev. Co., sec. 29-7s-2w. R.U.

Continental Oil Co. No. 1-D Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,342 ft.; P.B. to 3,600 ft.; W.O.C.

Continental Oil Co. No. 2 P. O. Johnson, sec. 30-7s-2w. Drk.

Continental Oil Co. No. 1-A Young, sec. 29-7s-2w. T.D. 8,318 ft.; I.P. 226 bbls. per day through 5/32-in. choke.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2 Harang Sec. 8-17s-20e. R.U.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. T.D. 8,394 ft.; P.B. 7,701 ft.; fsg.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w, S.D. 5,047 ft.

Humble O. & R. Co. No. 1 Nordyke, sec 23. T.D. 6,855 ft.; P.B. 6,522 ft. to straighten hole.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Mineral Dev., Inc., No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.

George Conover No. 1 Purdy-Hess, sec. 36-2n-3e. Drk.

Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 1-8s-13w. Drlg. 120 ft.

Wilfred Lahaye No. 1 Bass, sec. 9-10s-12w. S.D. 80 ft.

Cameron Parish

Magnolia Pet. Co. No. 1 Gray Hrs., sec. 8-15s-14w. Drlg. shale 2,902 ft.

Pure Oil Co. No. 1 Mallard Bay, sec. 23-13s-2w. 18⅝-in. csg. 1,499 ft.; 9⅝-in. csg. 7,906 ft.; drlg. sand 8,869 ft.

Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. S.D. 1,410 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Cavalier Oil Co. No. 1 Young, sec. 62-4s 2w. Abd. loc.

East Feliciana Parish

East Feliciana Oil No. 1 West & Budding sec. 37-1s-1w. Spudded 15 ft. and S.D.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 2-A Wilbert, sec. 74-9s-10e. Drlg. shale 1,710 ft.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft.; S.D. 3,950 ft.

Texas Co. No. 1-B State, Vermilion Bay sec. 16-15s-6e. Drlg. shale and lime 10,298 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 12S 12s-11e. S.D. 2,165 ft.

Jefferson Davis Parish

H. M. Naylor No. 2 Johnson-Bourdreaux, sec. 39-10s-3w. Drlg. 175 ft.

Shell Pet. Corp. No. 1 Joe Sturdivant sec. 25-10s-4w. 10¾-in. csg. 2,616 ft T.D. 9,747 ft.; fsg.

Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, sec. 28-7s-3w. Drlg. sh. 6,410 ft.

Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. R.U.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 65-17s-19e. Dredging canal.

Wm. Helis No. 1 City of New Orleans sec. 19-23s-23e. Drlg. sh. 6,612 ft.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-32s-19. T.D. 2,715 ft.; washing to bottom.

Tide Water Oil Co. No. 2 Manhattan Fruit Co., sec. 34-21s-22e. T.D. 4,762 ft.; P.B. 1,920 ft.; drlg. sh. 3,597 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. shale 3,769 ft .

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. T.D. 1,420 ft.; 13⅜-in. csg. 303 ft.

St. Landry Parish

Superior Oil Prod. Co. No. 1 Savole, sec. 26-8s-3e. T.D. 9,428 ft.; 7-in. csg. 6,678 ft.; perf. csg. 5,316-19½ ft.; flwd. 41 bbls. in 15 hrs. through 13/64-in. ck. killed well to perf. csg. 5,320-23 ft.; I.P. 21 bbls. of oil per day through 14/64-in. choke.

Superior Oil Prod. Co. No. 2 A. Savoie, sec. 26-8s-3e. 11¾-in. csg. 1,180 ft.; drlg. plug.

St. Martin Parish

Shell Pet. Corp. No. 1 Hefia Ld. Co., sec. 38-8s-5e. Cg. sh. 8,733 ft.

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. 18⅝-in. csg. 106 ft.; drlg. sd. and sh. 5,283 ft.

Texas Co. No. 3 State, sec. 14-10s-9e Driving piling.

St. Mary Parish

Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. Drlg. sh. and lime 9,944 ft.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-19s-19e. T.D. 8,391 ft.; fsg.

Shell Pet. Corp. No. 1-B Realty, sec. 18-17s-15e. Cg. shale 8,370 ft.

Vermilion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. T.D. 11,732 ft.; circulating with mud; well tried to blow out; fsg. for stuck D.S.; hole cleaned to 10,680 ft.; set cmt.; P.B. to 10,800 ft.; sdtrkd. at 10,800 ft.; T.D. 12,216 ft.; 5-in. csg. 11,795 ft.; waiting on drill pipe.

Stanolind O. & G. Co. No. 1 Fred Stovall 13⅜-in. csg. 1,980 ft.; drlg. sh. 11,328 ft.

TEXAS

Week Ending January 16

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 11 McCasland, Wm. Smithers Sur. Drlg. sh. 3,170 ft.

Humble O. & R. Co. No. 4-B Maclemell, Smithers Sur. T.D. 3,524 ft.; 7-in. csg. 3,434 ft.; R.U. to pmp.

Humble O. & R. Co. No. 10-B Hardy, J. E. Groce Sur. T.D. 4,214 ft.; tstg.

Hastings—Brazoria County

Humble O. & R. Co. No. 2-B Brown, Perry & Austin Sur., Lot 88. R.U.

Humble O. & R. Co. No. 1 E. G. Flint, B.B.B.&C. Sur. T.D. 6,060 ft.; 5½-in. csg. 5,998 ft.; I.P. 24 B.P.H., ¼-in. ck.

Humble O. & R. Co. No. 1-B Graham, B. B.B.&C. Sur., Lot 5. Drlg. sh. 5,320 ft.

Humble O. & R. Co. No. 1 King, H.T.&B. Sur. Drk.

Stanolind O. & G. Co. No. 5-B Brown, H. T.&B. Sur. No. 29. T.D. 6,080 ft.; tstg.

Stanolind O. & G. Co. No. 4 Cannon, H. T.&B. Sur. Bldg. drk.

Stanolind O. & G. Co. No. 2 T. C. Edwards, Wm. Henry Sur. Loc.

Stanolind O. & G. Co. No. 7 Drake, H.T. &B. Sur. No. 36. T.D. 6,080 ft.; 7-in. csg. 5,813 ft.; I.P. 557 bbls. in 21 hrs., ¾-in. ck.; T.P. 925 lbs.

Stanolind O. & G. Co. No. 7 Ford, A.C.H.& B. Sur. No. 1. T.D. 6,080 ft.; 7-in. csg. 5,797 ft.

Stanolind O. & G. Co. No. 9 Ford, A.C. H.&B. Sur. No. 1. Drk.

Stanolind O. & G. Co. No. 10 Ford, A.C. H.&B. Sur. No 1. Loc.

Stanolind O. & G. Co. No. 1 Legare, H.T. &B. Sur. No. 29. 10¾-in. csg. 1,690 ft.; drlg. sdy. sh. 4,033 ft.

Stanolind O. & G. Co. No. 1 Sheffield, H.T.&B. Sur. No. 29. Cg. sd. 5,698 ft.

Stanolind O. & G. Co. No. 3 Surface, B. B.B.&C. Sur. Drk.

Stanolind O. & G. Co. No. 1 Wagner, H. T.&B. Sur. No. 29. 10¾-in. csg. 1,695 ft.; drlg. sh. 4,912 ft.

Stanolind O. & G. Co. No. 3 Williams, A. C.H.&B. Sur. No. 1. Drk.

Windsor Oil Co. No. 1 Hirsch, B.B.B.& C. Sur. R.U.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 K. M. Gibson, J. W. Hall Sur. T.D. 6,358 ft.; top oil sd. 6,351 ft.; 9⅝-in. csg. 6,337 ft.; flowing dry gas.

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. T.D. 6,985 ft.; rmg. to make drill stem test.

Shell Pet. Corp. No. 1 Prison Farm, J. W. Hall Sur. T.D. 6,365 ft.; 7-in. csg. 6,344 ft.; W.O.C.

Manvel—Brazoria County

Bowles & Borsodi No. 4 Norvell Co., Inc., H.T.&B. Sur. No. 23. R.U. and S.D.

Burton Drlg. Co. No. 1-A Cooling, A.C.H. &B. Sur. T.D. 4,024 ft.; comp. for gas well.

Harrison and Abercrombie No. 2 Stratton. Drlg. sdy. sh. 4,900 ft.

E. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 5 Leider, H. N. Little Sur. Drlg. sh. and L. 3,411 ft.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 3 Bernard River, Charles Breen Sur. 9⅝-in. csg. 6,070 ft.; top sd. 9,662 ft.; cg. 9,711 ft.

Heyser—Calhoun County

Humble O. & R. Co. No. 5 E. H. Welder, J. M. Rios Sur. Drk.

Humble O. & R. Co. No. 7-A P. H. Welder, A. Sisneros Sur. T.D. 5,470 ft.; 7-in. csg. 5,470 ft.; tstd. gas; pulling screen.

Humble O. & R. Co. No. 8-A P. H. Welder, J. M. Rios Sur. Drk.

Humble O. & R. Co. No. 9-A P. H. Welder, A. Sisneros Sur. Drk.

Humble O. & R. Co. No. 8-B P. H. Welder, A. Sisneros Sur. Drlg. sh. 4,000 ft.

Humble O. & R. Co. No. 9-B P. H. Welder, A. Sisneros Sur. Loc.

Anahuac—Chambers County

Gulf Oil Corp. No. 1 Acom, sec. 45, H.& T.C. Sur. T.D. 7,142 ft.; tstd. mud and S.W. on D.S.T. 6,890-7,130 ft.; S.D.

Gulf Oil Corp. No. 6 Knowles, sec. 48, H. &T.C. Sur. Spudded.

Gulf Oil Corp. No. 2 Pommer, sec. 40, H. &T.C. Sur. R.U.

Gulf Oil Corp. No. 2 Wilcox, H.&T.C. Sur., sec. 48. Drk.

Humble O. & R. Co. No. 10 Broussard-Hebert, sec. 59, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 11 Broussard-Hebert, sec. 59, H.&T.C. Sur. Loc.

Humble O. & R. Co. No. 9 Engels, J. A. Beckwith Sur. T.D. 7,075 ft.; top sd. 6,997 ft.

Humble O. & R. Co. No. 6 Johnson, H.& T.C. Sur., sec. 47. 9⅝-in. csg. 1,273 ft.; drlg. sh. 6,575 ft.

Humble O. & R. Co. No. 25 Middleton, sec. 58, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 8-B White, J. McGahey Sur. T.D. 7,129 ft.; 5½-in. csg. 7,122 ft.

Humble O. & R. Co. No. 9-B White, J. McGahey Sur. Drk.

Humble O. & R. Co. No. 17 White, J. McGahey Sur. 9⅝-in. csg. 1,245 ft.

Humble O. & R. Co. No. 19 White, J. McGahey Sur. T.D. 7,137 ft.; 5½-in. csg. 7,125 ft.; I.P. 15 B.P.H. through ¼-in. choke.

Cotton Lake—Chambers County

Glenn H. McCarthy No. 8 Kilgore, Townsend Sur. R.U.

Kirby Pet. Co. No. 1 W. D. Haden, Chambers County School Land Sur. Loc.

Salt Dome Oil Co. No. 1-A Lawrence, Solomon Barrow Sur. T.D. 7,008 ft.; 7-in. csg. 6,563 ft.; set cmt. retainer at 6,517 ft.; perf. csg. 6,489-93 ft.; flowed 24 bbls. of distillate through ¼-in. ck.

Salt Dome Oil Co. No. 1-B Lawrence, S. Barrow Sur. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 1-B White, Wm. Mays Sur. Drk.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 Iola Mae White, M. A. Carroll Sur. 10¾-in. csg. 1,136 ft.; drlg. sh. 4,596 ft.

Stanolind O. & G. Co. No. 4 State, due S of Sun Oil Co. No. 1 Chambers in Turtle Bay. Drlg. sh. 5,632 ft.

Sun Oil Co. No. 3 Chambers, Chambers County Sch. Ld. Abd. 8,025 ft.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 72 Davis, M. Young Sur. T.D. 2,759 ft.; I.P. 250 B.P.D. through ¼-in. ck.

Gulf Oil Corp. No. 73 Davis, M. Young Sur. Drk.

Blue Ridge—Fort Bend County

Barnett Pet. Co. No. 1-B Blakely, Lot 7, Blk. E, Drew Sur. T.D. 3,876 ft. (cor.); sanded up; rng. screen.

Boling—Fort Bend County

Brewster Trustee No. 3 H. R. Farmer, J. Scott Sur. T.D. 4,284 ft.; rig up to pump.

Mack Hank Oil Co. No. 3-C Farmer, J. Scott Sur. T.D. 4,798 ft.; W.O.C.

H. K. Spear et al No. 1 Kasperek, Simon Miller Sur. Drlg. in sdtrkd. hole 3,973 ft.

Orchard—Fort Bend County

Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8. T.D. 2,527 ft.; 13⅜-in. csg. 2,522 ft.; comp.; no gauge.

Gulf Oil Co. No. 50 Moore Germain Immg. Drlg. sh. 1,780 ft.

Gulf Oil Corp. No. 51 Moore, Mark Smith Sur. Drk.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H. Denman Sur. Loc.

Stanolind O. & G. Co. No. 60-A Cade, M. Duncan Sur. Drlg. sd. 5,149 ft.

Stanolind O. & G. Co. No. 59-A M. Fitzsimmons Sur. T.D. 5,255 ft.; S.D.

Dickinson—Galveston County

Coast Pet. Corp. No. 5 Maco Stewart, W. K. Wilson Sur. Drk.

Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Loc.

Diadem Oil Co. No. 1 Way, P. G. Merritt Sur. Drlg. sh. 7,670 ft.

Humble O. & R. Co. No. 13-A Stewart, W. K. Wilson Sur. Top sd. 8,767 ft.; 7-in. csg. 8,770 ft.; T.D. 8,778 ft.; W.O.C.

Humble O. & R. Co. No. 14-A Stewart, W. K. Wilson Sur. Drk.

Kenben Oil Co. No. 3 Stewart, W. K. Wilson Sur. T.D. 8,671 ft.; 7-in. csg. 8,670 ft.

Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.

Greens Lake—Galveston County

Sun Oil Co. No. 6 W. A. Hughes, Wm. Scott Sur. Drlg. sand and boulders 1,466 ft.

Silsbee—Hardin County

Republic Prod.-Houston Oil Co. No. 4 fee, G. W. Brooks Sur. T.D. 6,970 ft.; I.P. 422 bbls. per day through ¼-in. choke.

Republic Prod. Co.-Houston Oil Co. No. 5 Brooks, Geo. Brooks Sur. Drlg. shale 6,530 ft.

Republic Prod. Co.-Houston Oil Co. No. 6 Brooks, J. N. Brooks Sur. Derrick.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543. Derrick.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 2-C Dopslauf, W. C. R.R. Sur., Blk. 1. Testing.

Mykawa—Harris County

Flanagan Prod. Co. No. 2 Minnetex, W. J. Lovett Sur. R.U.

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

Pierce Junction—Harris County

Rio Bravo Oil Co. No. 1 Hooks, J. Hamilton Sur. Drlg. sand and shale 1,548 ft.

South Houston—Harris County

Stanolind O. & G. Co. No. 1 Green, H.T.& B. Sur. No. 6, Tr. 134. 9⅝-in. csg. 1,507 ft.; drlg. shale 3,435 ft.

Stanolind O. & G. Co. No. 2 Holder, H. T.&B. Sur., Tr. 145. T.D. 1,435 ft.; T.D. 4,000 ft.; W.O.C.

Stanolind O. & G. Co. No. 2 Owen, H.T.& B. Sur. No. 6. T.D. 4,000 ft.; 5½-in. csg. 3,944 ft.; I.P. 157 bbls. in 9 hrs.

Tomball—Harris County

Humble O. & R. Co. No. 1 Conway, E. Smith Sur. T.D. 5,567 ft.; 5½-in. csg. 5,562 ft.; I.P. 22 bbls. per hour through ¼-in. choke.

Humble O. & R. Co. No. 5 H. S. Gebhard, W. Perkins Sur. Drk.

Humble O. & R. Co. No. 4 Hillegeist, J. House Sur. Drlg. shale 4,803 ft.

Humble O. & R. Co. No. 3 C. H. Mueller, T. A. Duclose Sur. Drk.

Humble O. & R. Co. No. 1 W. L. Pickens, J. Pruitt Sur. Top sand 5,558 ft.; T.D. 5,569 ft.; 5½-in. csg. 5,562 ft.

Humble O. & R. Co. No. 15 J. D. Reid, C. Goodrich Sur. Drlg. shale 2,383 ft.

Humble O. & R. Co. No. 1 Tomball townsite, R. Hubbard Sur. T.D. 5,579 ft.; 5½-in. csg. 5,525 ft. I.P. 2,016,000 ft. of gas daily.

Amelia—Jefferson County

Humble O. & R. Co. No. 2 R. J. Peveto, R. J. Peveto Sur. Loc.

Humble O. & R. Co. No. 1 Tyrell-Combest Realty Co., A. Savery Sur. 16-in. csg. 214 ft.; drlg. shale 6,274 ft.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 1 Fitzhugh, McFaddin Sur. 10¾-in. csg. 1,861 ft.; T.D. 3,194 ft.; fsg.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. Drlg. 1,510 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 3 Carpenter, M. Peveto Sur. T.D. 6,053 ft.

Shell Pet. Corp. No. 4 Paggi, J. W. Kirby Sur. Loc.

Sun Oil Co. No. 3 Long, J. Blair Sur. T.D. 6,056 ft.; W.O.C.

Sun Oil Co. No. 1 A. J. Mouboules, J. Blair Sur. Drk.

Cleveland—Liberty County

Gulf Oil Corp. No. 4-C R. D. McDonald, C. Smith Sur. Loc.

Hankamer—Liberty County

Gulf Oil Corp. No. 1 Bernice Hankamer. T.D. 4,331 ft.; R.U. to pump.

Hull—Liberty County

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; cut and pulled tbg. 3,307 ft.

Gulf Oil Corp. No. 22 Baldwin, J. Devore Sur. S.D. 3,909 ft.

Gulf Oil Corp. No. 114 Phoenix, J. Devore Sur. Drlg. sh. 4,630 ft.

Esperson—Liberty County

General Crude Oil Co. No. 24 Moores Bluff. Drlg. sh. 2,830 ft.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker, E. Hall Sur. 13⅜-in. csg. 1,260 ft.; 9⅝-in. csg. cmtd. at 6,500 ft.; T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 9,405-13 ft.; tstd. 7,500 ft. S.W. on D S.T.; made squeeze job; perf. csg. 9,528-31 ft.; testing.

Hawkinsville—Matagorda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; base salt 2,099 ft. 18⅝-in. csg. 2,174 ft.; drlg. rock 3,257 ft.

Markham—Matagorda County

Hamill and Hamill No. 6 Kountze, Henry Parker Sur. Drlg. sh. 2,837 ft.

Powers Prod. Co. No. 1-C Meyers, Wm. Hadden Sur. Drlg. sh. 2,150 ft.

Texas Gulf Prod. Co. No. 1 McDonald, I. &G.N. Sur., sec. 5. T.D. 4,677 ft.; P.B. 3,471 ft.; set whipstock; no report.

Van Vleck—Matagorda County

Skelly Oil Co. No. 2 W. P. Johnson, M. Cummins Sur. R.U.

Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur. No. 8. R.U.

Skelly Oil Co. No. 1 First Natl. Bank, I.&G.N. Sur. No. 7. R.U.

Conroe—Montgomery County

Feltex Oil Co. No. 3 Keystone Mills, L. Smith Sur. T.D. 4,996 ft.; 7-in. csg. 4,968 ft.; comp.; no gauge.

Normandie Oil Co. No. 23 Texas-Osage. Cg. 5,000 ft.

Strake Pet. Co. No. 9 Bean, W. C. Lynch Sur. T.D. 5,067 ft.; 7-in. csg. 5,040 ft.; comp.; no gauge.

Sun Oil Co. No. 21 Keystone Mills, L. Smith Sur. T.D. 5,053 ft.; 7-in. csg. 5,002 ft.; I.P. 321 bbls. per day through ¼-in. choke.

Ace—Polk County

Peyton Bros. No. 2-B Kirby & West, G. S. Thomas Sur. Derrick.

Segno—Polk County

S. J. Ryan No. 1 Wing Est., I.&G.N. Sur. No. 15. Spudded.

Greta—Refugio County

Hewitt & Daugherty No. 38 Lambert, Swisher Sur. Drlg. 2,700 ft.

United Prod. Co. No. 34 Lambert, Swisher Sur. Drlg. 2,100 ft.

United Gas Co. No. 34 Lambert, Swisher Sur. T.D. 5,917 ft.; 7-in. csg. 5,915 ft.

Quintana-O'Connor—Refugio County

Illinois Pet. Corp. No. 1 Heard, Ximines Sur. Drlg. 3,130 ft.

Quintana Oil Co. No. 2 Bauer, Ximines Sur. Drlg. sh. 780 ft.

Quintana Oil Co. No. 4 Heard, T. H. Webb Sur. T.D. 5,935 ft.; I.P. 1,300 B.P.D. through ⅝-in. choke.

Keran—Victoria County

Gulf Oil Corp. No. 9 Keran, M. Delean Sur. T.D. 5,800 ft.; 7-in. csg. 5,475 ft.

Placedo—Victoria County

Barnsdall Oil Co.-American Liberty Oil Co. No. 7 J. M. Pickering et al, A. Murray Sur. Coring sand 4,776 ft.

Barnsdall Oil Co.-American Liberty Oil Co. No. 12 Pickering and Roos, S.A.&M G. Sur. No. 5. T.D. 4,777 ft.; 7-in. csg. 4,765 ft.

Crown Central Oil Co. No. 1 Lauder, S. A.&M.G. Sur. T.D. 4,772 ft.; I.P. 100 bbls. 24 hrs. through 9/64-in. choke.

Magnolia Pet. Co. No. 4 Sklar, S.A.&M.G. Sur. No. 7. Drk.

Ownby No. 4 Malek, S.A.&M.G. Sur. T.D. 4,770 ft.; 5½-in. csg. 4,762 ft.; swabbing.

Clay Creek—Washington County

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur 7-in. csg. 7,445 ft.; swbd. and flwd. 16 bbls. oil in 10 hrs.; drlg. 7,965 ft.

Five Corners—Wharton County

Texas Co. No. 5-B Pierce, A. H. Pierce Sur. T.D. 5,554 ft.; 7-in. csg. 5,545 ft.

Louise—Wharton County

Pure Oil Co. No. 7 Kountze, Morris & Cummins Sur., sec. 19. Derrick.

Magnet—Wharton County

C. E. McDonald No. 1 Sweet, J. Smith & McKenzie Sur. Coring sand and shale 5,656 ft.

Pickett Ridge—Wharton County

Texas Co. No. 4 Nilson, I.&G.N. Sur. No. 37. Drlg. shale and lime 2,946 ft.

Withers—Wharton County

Texas Co. No. 20-C Pierce, Caldwell Sur Drlg. shale and lime 2,254 ft.

Texas Co. No. 17-C Pierce, Wm. Pettus Sur. 7-in. csg. 5,551 ft.; P.B. 5,554 ft.; rocking with gas.

Texas Co. No. 19-C Pierce, Wm. Pettus Sur. T.D. 5,571 ft.; running csg.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J Stephenson Sur. R.U.

W. H. Mitchell et al No. 1 F. Fenner, J Fitzgibbons Sur. S.D. 3,910 ft.

Brazoria County

Beatty, Bowles and Borsodi No. 1 Truska Lot 4, Blk. 8, H.T.&B. Sur. 9⅝-in. csg 6,430 ft.; drlg. sh. 9,307 ft.

C. B. Bunte No. 1 Fite, D. Talley Sur 10¾-in. csg. 1,030 ft.; coring sd. 6,500 ft.

Ohio Oil Co. No. 1 Hazel Roirt, D. McNeil Sur. No. 2. Loc.

Texas Co. No. 1 Robbins, J. W. Brougham Sur. 11¾-in. csg. 4,950 ft.; T.D. 6,811 ft.; cut drill pipe at 6,392 ft.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8 Matagorda Island. 13⅜-in. csg. at 1,824 ft.

Chambers County

Sun Oil Co. No. 2 Hamilton, J. T. White Sur. 13⅜-in. csg. 1,385 ft.; T.D. 8,869 ft.; 8⅝-in. csg. at 8,715 ft.; set cmt. plug from 8,869-8,750 ft.; flowed 24 bbls. of distillate with est. 2,000,000 ft. of gas per day through ½-in. choke.

Colorado County

Coyle-Concord & Sterling No. 1 Mary E. South, I.&G.N. Sur., sec. 41. T.D. 6,189 ft; 5½-in. csg. 6,187 ft.; P.B. 6,055 ft.; cutting and pulling tubing.

Eden Oil Co. No. 1 Trulia Wells, M. Whitting and Osborne League. Drk.

Fayette County

McNeil Pet. Co. No. 1 Dybla, A. Thompson Sur. Drk.

Galveston County

Shell Pet. Corp. No. 1 Maco Stewart, Spillman Sur. 9⅝-in. csg. 7,707 ft.; T.D. 10,460 ft.; P.B. 3,526 ft.; perf. csg. 3,502-12 ft.; tested mud and salt water.

Grimes County

Fred Harris No. 1 J. C. Chaney, W. Donoho Sur. 10¾-in. csg. 100 ft.; drlg. sh. 3,113 ft.; no report.

Hardin County

T. S. Deskin No. 1 Mary B. Collier, O. C. Nelson Sur. Loc.

Harris County

Farrel and Cox No. 1 Bender, N. W. Travis Sur. S.D. 700 ft.

George Lawrence et al No. 1 Zoppa, J Farwell Sur. 10¾-in. csg. 605 ft.; T.D. 4,525 ft.; S.D.

Stanolind O. & G. Co. No. 1 Warren Minerals, H.T.&B. Sur. No. 1. Drlg. sh. and shell 3,494 ft.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. Drlg. shale 3,740 ft.

Sun Oil Co. No. 2 Broussard & Hebert, T.&N.O. Sur. T.D. 8,217 ft.; 9⅝-in. csg. 8,190 ft.; flowed est. 5 bbls. of fluid per hour; T.P. 3,100 lbs.; sanded up; shut in.

Lavaca County

Cole Pet. Co. No. 1 Reed-Nollkamper, A. Smothers Sur. S.D. 2,395 ft.

Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. S.D. 2,395 ft.

Liberty County

Kenco Oil Corp. No. 1 E. B. Pickett, H. T.&B. Sur. No. 10. Spudded.

Matagorda County

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. Drlg. sandy shale 5,572 ft.

Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. Drlg. shale 1,720 ft.

J. G. Mayo and Smith and McDannald No. 1 E. L. Calhoun, David Rawls Sur. Drlg. shale 3,240 ft.

Strake Pet. Co. No. 1 G. T. Sargent, L. E. Parker Sur. 13⅜-in. csg. 1,607 ft. T.D. 6,750 ft.; running 9⅝-in. csg.

Montgomery County

Chapman No. 1 Foster, D. Pevy House Sur. 10¾-in. csg. 42 ft.; S.D. 3,552 ft.

Polk County

Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. Rig.

Refugio County

Circle W. Oil Co. No. 1 Bissett, John Croskett Sur. T.D. 6,510 ft.; abd.

Paul Meadows No. 1 Temple Lbr. Co., G. W. Main Sur. Drk.

Trinity County

Daniel E. Boone No. 1 Tullia, Wm. Watson Sur. S.D. 1,354 ft.

Cortez Oil Co. No. 1 V. and R. Kennedy, J. M. Prado Sur. R.U.

Tyler County

Republic Prod.-Houston Oil Co. No. 1 Hurd, Norman Hurd Lge. 16-in. csg. 47 ft.; 10¾-in. csg. 1,649 ft.; T.D. 8,047 ft.; abd.

Victoria County

Plymouth Oil Co. No. 1 J. J. Welder, S. A Balding Sur. T.D. 6,648 ft.; P.B. to 900 ft.; abd.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Roswell Oil Co. No. 1 J. Bosborn, J. Jordan Sur. S.D. 520 ft.

Waller County

Sumas Prod. Co. of Austin No. 1 J. J. Menker. R.U.

Washington County

Smith & Schlinke No. 1 Woode, J. Clark Sur. Drlg. 710 ft.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1 Kate J. Edwards, 80 ft. W line, 330 ft. S line, Lot. 87, Lamar Townsite, Wm. Lewis Sur. Drlg. 7,314 ft.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Drlg. 2,011 ft.

Helvetia Oil Co. No. 2 S. Pratt, 333 ft. SE and SW lines tr., Garza Sur. 46. Top Serp. 3,085 ft.; T.D. 3,460 ft. P.B. 3,085 ft.; S.D.

Bandera County

A. T. Crane No. 1 Watson, Sur. 71. S.D. 2,035 ft.

Bee County

Renson & Jones No. 1 Ray, Anna Burk Sur. Stdg. 4,911 ft.

Blanco Oil Co. & Buchanan No. 1 Hartzendorf, Geo. A. Kern Sur. Spudded.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Drlg 447 ft.

Brooks County

California Co. No. 1 Jones, 19,800 ft. S line, 4,500 ft. W line, La Mestina Gr. D.S.T. 3,674-88 ft.; 300 ft. oil in 10 min.; W.P. 60 lbs.; sd. 3,670-88 ft.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.

Duval County

Argo Oil Co. & John Clopton No. 1 Smith Corkill, C E¼ Sur. 61. T.D. 3,514 ft.; D.&A.

Atlantic Ref. Co. No. 1 Hamilton, sec. 37. Loc.

J. B. Blanchard No. 1 Dinn, 330 ft. N and E lines, Sur. 462. T.D. 3,659 ft.; D.&A.

Hiawatha Oil Co. No. 1 Southland Life Ins. Co., 330 ft. S and E lines, sec. 15, Agua Poquita gr. Cg. 5,085 ft.

Kearny, Gravis et al No. 1 Holzapfel, sec. 42. Temp. abd.

Magnolia Pet. Co. No. 1 D.C.R.C., 330 ft. S and W lines, lsc., sec. 902. Loc.

Oliver Oil Co. No. 1 Shaffer, Sur. 146. T.D. 410 ft.; S.D.

Albert Plummer No. 1 Danmier, 990 ft. S line, 330 ft. W line, NE¼ Sur. 58. T.D. 3,175 ft.; D.&A.

Edwards County

I.T.I.O. No. 1 Love & Evans, sec. 66, Blk. 3, G.W.T.&P. Ry. Sur. (Workover). Prep. deepen from O.T.D. 3,002 ft. to 6,250 ft.

Plateau Oil Co. No. 1 R. L. Hatch, sec. 66, J. W. May Sur. S.D. 4,750 ft.

Fayette County

McNeil Pet. Co. No. 1 Dybola, A. Thompson Lge. R.U.

Goliad County

Rual Singer No. 1 C Wood, Geo. Villa Sur. W.O. rig.

Sun Oil Co. No. 2 Fromme, L. Fulton Sur. Set csg. 420 ft.; W.O.C.

Gonzales County

M. S. Holliday No. 1 Edwards, W. W. Page Lge. Sd. 562-69 ft.; S.O.; S.D.

Guadalupe County

Long & Ross No. 1 Feltz, Dunn Sur. T.D. 633 ft.; S.O.; S.D.

Hidalgo County

Dale Smith No. 1 Fairbanks & Young, Blk. 44, Porc. 46, jurisdiction of Reynosa. Drlg. 1,892 ft.

Sun Oil Co. No. 1-A Sweeny Est., Lot 1, Wayne Wood Subd. No. 2. T.D. 6,598 ft.; stdg.

Jim Hogg County

Gifford Oil Co. No. 1 Armstrong, Sur. 43. R.U.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Gifford Oil Co. No. 1 Armstrong, Sur. 43. Loc.

Gist & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines Sur. 151. Set 7-in. csg. 2,340 ft.; fsg. 5,312 ft.

G. Tzelmelia (Putnam & Stewart) No. 1 Canales, C Blk. 32, Mosser Subd. (reinstated). S.D. 5,036 ft.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. S.D. 460 ft.

Kerr County

S. W. Forrest No. 1 J. W. Baily, 1,000 ft. N line, 330 ft. E line, Brendle Sur. S.D. 723 ft.

LaSalle County

W. H. Vernon No. 1 Las Abias ranch, 150 ft. N line, midway E and W lines, sec. 726. S.D. 800 ft.

Lee County

Eleaissa Oil Co. No. 1 Sanders, Van Reeder Sur. D.&A. 2,500 ft.

Pederson et al No. 1 Turner, David Hudson Sur. T.D. 6,560 ft.; milling 3,600 ft. to sdtrk.

Live Oak County

H. Coquat No. 1 L. Reagan, Santiago McGloin Sur. R.U.

J. H. Durbin No. 4 Marbach, S. Hays Sur. T.D. 922 ft.; P.B. 902 ft.; D.&A.

Hagen & Stewart No. 1 S. A. Joint Stock Ld. Bank, 800-ac. tr., John Turner Sur. Cg. 1,096 ft.

Loma Oil Co. No. 2 Cardwell, 95-ac. tr., Sparks Sur. Loc.

Loma Oil Co. No. 1 Reagan, 1,800 ft. N highway, 350 ft. E line, 1,182-ac. tr., Turner Sur. Drlg. 982 ft.

Martell & Sterett No. 1 Whitsett Townsite, Blk. 55, J. Houghlingan Sur. T.D. 1,060 ft.; D.&A.

V. G. Schimmell No. 1 Geo. West, C 150-ac. tr., J. Poitevent Sur. 231. Drlg. 2,532 ft.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Uleiting Sur. No. 6. S.D. 40 ft.

E. M. Jones No. 1 Ezell, 160-ac. tr., sec. 3, Thos. Adams Sur. D.S.T. 1,179-91 ft. blew out and shut in; circulating.

E. M. Jones No. 2 Ezell, 330 ft. W line, 990 ft. N line, 160-ac. tr., sec. 13, Fadden Sur. Drlg. 1,047 ft.

Rowan & Hope No. 1 Edrington, N½ SE¼ Sur. 81. Drk.

Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

Medina County

F. Brown No. 1 Bilhartz, J. Campbell Sur. 24. Set sur. csg. 200 ft.; W.O.C.

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.

R. P. Whitfield No. 1 Odem, Henry Castro Sur. 177. Cg. 697 ft.

W. H. Wycoff No. 1 Bendele, 1,275 ft. W line, 150 ft. N line, Joe Barnhart Sur. 593. Drlg. 316 ft.

Nueces County

Allen and Seaboard Oil Corp. No. 1-A Chapman, 1,320 ft. N and E lines, sec. 40; (W.O. of old Texas Seaboard test); T.D. 7,006 ft.; D.&A.

Allen & Seaboard Oil Corp. No. 2 Chapman, 660 ft. S and W lines, sec. 38. M. I.M.

W. F. Morgan No. 1 Oliver Bird, 330 ft. S and W lines, 132-ac. tr., Oliver Sur. 162. Drlg. 5,134 ft.

Sloan & Green No. 1 Cassens, sec. 26, Longorio Sur. M.I.M.

Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.

Baltic Drlg. Co. No. 1 Poenisch, Lot 2, Blk. 32, Flour Bluff Addn. (workover of former Hurlburt test). O.T.D. 6,250 ft.; R.U.; S.D.

Wellington Oil Co. No. 1 Stockton, 300 ft. S and W lines NE¼ sec. 25. T.D. 7,005 ft.; perf. 4,718-25 ft.; tstg.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Drlg. 3,721 ft.

San Patricio County

W. B. Craig No. 1 Drainage Ditch, M. Remon Sur. R.U.

W. B. Craig No. 1 Nelson, 471 ft. NE line, 466 ft. SE line, S¼, sec. 7, 1st Addn. Loc.

L. A. Douglas and J. O. Williams No. 1 Kokernot, 90-ac. tr., sec. 19. Drlg. 672 ft.

Eleanor Oil Co. No. 1 W. W. Toland, sec. 15, Blk. A, Coleman-Fulton Pasture Subd. Loc.

Golding & Fearis No. 1 Turner, 330 ft. S and E lines, Blk. 6, Masterson Subd. Drlg. 4,452 ft.

Windsor Oil Co. No. 1 Bissett, Tr. 3, Tivoli Subd., Crockett Sur. Loc.

Starr County

J. F. Anderson No. 1 Yzagierre, Tr. 1, Porc. 79, J. of Camargo. Drlg. 2,749 ft.

J. H. Brower No. 1 Saenz, Sur. 363. S.D. 150 ft.

F. Davenport No. 1 Kelsey-Bass, 534 ft. S line, N 585-ac. tr., 2,856 ft. E line, Porc. 87. Set 1,000 ft. of surf. csg.; no report.

Davenport-Slick-Urschel No. 1 Slick Est., Davenport ranch, sec. 485. Sd. 5,571-93 ft.; good odor oil and gas; fsg.

R. A. Mitchell No. 2 Bass, Sur. 8, Porcs. 75-77. Drlg. sh. 4,827 ft.

Moss & Heard No. 1 Ricaby, 1,500 ft. N of Highway No. 4, Porc. 83. Oil sd. 1,308-20 ft.; set 7-in. csg. 1,308 ft.; drlg. plugs.

Sun Oil Co. No. 1 Orr, 330 ft. N and W lines, Porc. 103. Set csg. 94 ft.; T.D. 3,517 ft.; P.B. 2,679 ft.; tested S.W. at 2,130-40 ft.; S.D.

Webb County

American Texas Oil Co. No. 1 McKendricks, Porc. 46. D.&A. 3,010 ft.

Frank Gravis No. 1 Villareal, Sur. 2,344, D.&A. 2,006 ft.

O. W. Killam No. 1 fee, Sur. 1,690. Loc.

Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porc. 12, 13 and 14. Drlg. 1,521 ft.

Magnolia Pet. Co. No. 6 Garcia, Sur. 784, R.U.

Morgan Kirkwood No. 1 Frost Natl. Bank, Sur. 734. T.D. 2,000 ft.; S.D.

Paul Meaders No. 1 Garcia, Blk. 12, Sur. 1,101 ft.; Drlg. 772 ft.

Smith & Storey No. 1 Oppenheimer, Sur. 34. Drlg. 533 ft.

Smith & Taggart No. 1 Jones, Sur. 674. Drlg. 2,412 ft.

Wilcox O. & G. Co. No. 1 Dunbar, Sur. 2,292, J. Galen Gr. R.U.

Wilcox O. & G. Co. No. 1 Puig, Serna Blanca Pasture, Galan Gr., Sur. 2,181. Drlg. 5,472 ft.

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendias, C Lot 9, Sh. 4, San Juan de Carricitos Gr. M.I. rig.

Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. Loc.

Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover), T.D. 7,662 ft.; to drill deeper; R.U.

Zapata County

Allison et al No. 1 Bustamante, Sh. 14, Comitas Gr. Sd. 1,144-51 ft.; rng. csg.

Ivan Howard and R. F. Duggan No. 1 Cuellar Bros., Sur. 248. R.U.

Jennings No. 1 Martinez, Sur. 434. T.D. 150 ft.; S.D.

J. D. Long No. 1 Phelps, 200-ac. tr., Villa Gr. Drlg. 1,521 ft.

Mills Bennett Prod. Co. No. 1 Flores, Porc. 87. Drlg. 1,562 ft.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. Drlg. 914 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 2-B McCampbell, Lot 8, Blk. 39. Set sur. csg. 1,421 ft.; W.O.C.

Atlantic Ref. Co. No. 2-C McCampbell, 330 ft. SE line, 1,650 ft. SW line, lse., Lot 9, Blk. 40. Drlg. S.W. sd. 4,972 ft.

Buckingham Oil Co. No. 2-A McCampbell, sec. 42, McCampbell Subd. Sd. 6,534-44 ft.; set csg.; W.O.C.

Collins & Broughton No. 1 McCampbell, 330 ft. NE and NW lines, Blk. 10, McCampbell Subd. M.I.M.

J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc

Hilbig—Bastrop County

Joe E. Mills No. 1 Askew, 600 ft. NW line, 1,525 ft. SW line, 278.5-ac. tr. Wolfenberger Sur. T.D. 2,907 ft.; S.D.

Caesar—Bee County

Luling O. & G. Co. No. 3 Borroum, 450-ac. tr., Baker Sur. Gas sd. 3,079-88 ft.; testing.

Cosden—Bee County

Elwood & Young No. 3 Barnett, John Place Sur. Sd. 3,636-53 ft.; S.O.; P.B. 3,900 ft.; T.D. 4,050 ft.; S.D.; W.O.O.

Foley—Bee County

Texas Prospecting Co. No. 1 Halzmark, 70-ac. tr., S. May Sur. T.D. 4,046 ft.; comp. 148 B.P.D. on ½-in. choke.

Plummer—Bee County

W. C. McBride No. 1 Plummer, 34-ac. tr., sec. 33, Plummer-Chessman Sur. Loc.

J. A. West No. 1 Geo. Ray, Blanchard Sur. R.U.

Gas Ridge—Bexar County

American Gas Co. No. 5 Oliver, 400-ac. tr., Rodriguez Sur. Sd. 3,285-3,309 ft.; S.O.; drlg. 3,362 ft.

Alta Verde—Brooks County

L. & W. Oil Co. No. 1 Wm.Singer, Blk. 8, Sur. 436. Sd. 515-20 ft.; rng. tbg.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.

Adams & Lyles No. 5 Ellison, D. Cooper Sur. T.D. 2,333 ft.; D.&A.

Mee, Ames & Mee No. 1 Lancaster, D. Cooper Sur. Loc.

Taylor Pet. Co. No. 1 Caldwell County, 4-ac. tr., D. Cooper Sur. Drlg. 566 ft.

Colmena—Duval County

Conservative Oil Co. No. 2 D.C.R.C.-Seats, 133 ft. N Eline, 1,200 ft. SE line, Blk. 12 sec. 51. S.D. 1,544 ft.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. M.I.M.

El Mesquite—Duval County

Hamil & Smith No. 3 J. Benavides, Subd 2, El Mesquite Gr. T.D. 3,502 ft.; D.&A.

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Magnolia Pet. Co. No. 1 Hahl, Sur. 41, Sd. 2,410-16 ft.; comp. gasser.

Ralph Ogden No. 10 B.C.C., N½, S½, Sur. 135. Tstg. 2,455 ft.

San Diego Oil Corp. No. 5 Bennett, 330 ft. N and E lines, SE¼, SW¾, Sur. 44. T.D. 2,405 ft.; set csg.; W.O.C.

Southwest Drlg. Co. No. 1 Hahl, Sur. 64. Set csg. on sd. 2,537 ft.; deepening 2,541 ft.

J. T. Stover No. 2 Hester, Sur. 47. Drlg. 2,116 ft.

Hoffman—Duval County

Bridwell Oil Co. No. 2 Hoffman, 80-ac. tr., Sur. 111. Drlg. 1,526 ft.

Bridwell & Gorman-Yoakam No. 3 Robles, sec. 68. Loc.

Bridwell & Gorman-Yoakam No. 4 Robles, sec. 68. R.U.

Bridwell Oil Co. No. 5-B Sutherland, Sur. 112. Loc.

Kohler—Duval County

Humble O. & R. Co. No. 54-A Kohler, 330 ft. N and E lines, sec. 164. T.D. 2,624 ft.; set csg.; W.O.C.

Humble O. & R. Co. No. 2 Peters, 330 f N and W lines, Sur. 398, D.S.T. 2,642-60 ft.; 1,300 ft. oil in 20 min.; comp. gasser.

Humble O. & R. Co. No. 3 Peters, sec. 398. Loc.

Sun Oil Co. No. 1 Peters, 330 ft. S and W lines, Sur. 161. Set csg. 2,646 ft.; W.O.C.

Labbe—Duval County

Magnolia Pet. Co. No. 2 Labbe ranch, 990 ft. S and W lines, sec. 1. Drlg. 2,216 ft.

Loma Novia—Duval County

Bridwell Oil Co. No. 16-A Hubbard, Sur. 71. Sd. 2,727-42 ft.; comp. 123 B.P.D.

Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. R.U.

Humble O. & R. Co. No. 15-B Hubbard, Sur. 83. T.D. 2,745 ft.; comp. 41 B.P.H.

Humble O. & R. Co. No. 18-B Hubbard, Sur. 83. Set csg. 50 ft.; W.O.C.

Humble O. & R. Co. No. 32-B Hubbard, Sur. 72. Loc.

Humble O. & R. Co. No. 45-B Hubbard, Sur. 72. Drlg. 2,193 ft.

Humble O. & R. Co. No. 64-B Hubbard, E½, sec. 42. T.D. 2,783 ft.; R.U. to pump.

Humble O. & R. Co. No. 19 Ruiz, Sur. 553. Oil sd. 2,744 ft.; comp. 13 B.P.H.

Humble O. & R. Co. No. 20 Ruiz, Sur. 553. T.D. 2,500 ft.; S.D. repairs.

Magnolia Pet. Co. No. 42 Hahl, Sur. 67, sd. 2,724-37 ft.; comp. 40 B.P.D.

Magnolia Pet. Co. No. 53 Hahl, Sur. 67. Drlg. 2,412 ft.

Magnolia Pet. Co. No. 2 Herbst, Sur. 70. Comp. 35 B.P.D.; sd. 2,715-34 ft.

Magnolia Pet. Co. No. 10 Herbst, Sur. 41. Drlg. 376 ft.

Rosan Oil Co. No. 4-A Hubbard, Sur. 7 M.I.M.

Stieren Oil Co. No. 1 Wright, Sur. 72. R.U.

Texas Co. No. 1 A. Bishop, Sur. 57. Drlg. 120 ft.

Lopez—Webb—Duval Counties

Cox & Hamon No. 6 Peters, Sur. 322. Comp. 11 B.P.H.; T.D. 2,086 ft.

Gem Oil Co. No. 2 Peal, Sur. 72. M.I.M.

Humble O. & R. Co. No. 1 D.C.R.C., Sur 901. Loc.

Humble O. & R. Co. No. 4-C, D.C.R.C. Sur. 901. Drlg. 1,965 ft.

Humble O. & R. Co. No. 5-C D.C.R.C. Sur., sec. 901. Loc.

Magnolia Pet. Co. No. 1 D.C.R.C. Sur. 902. T.D. 2,400 ft.; fsg.

Magnolia Pet. Co. No. 30 Peal, Sur. 383. R.U.

Mills Bennett Prod. Co. No. 3 Alonzo Lopez, Sur. 111. Comp. 15 B.P.H.; T.D. 2,247 ft.

Mortimer & Springer No. 11-B Peal, Sur. 794. Comp. 480 B.P.D. on ¼-in. choke. T.D. 2,140 ft.

Mortimer & Springer No. 15-B Peal, Sur. 796. T.D. 2,116 ft.; set csg.; W.O.C.

Texas Co. No. 10-A D.C.R.C. Sur., Lot 19, sec. 196. M.I.M.

J. E. Thomas No. 1 Peal, Sur. 794. T.D. 2,500 ft.; D.&A. 2,550 ft.

Peters—Duval County

Windsor Oil Co. No. 5-B Peters, Sur. 34. Loc.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 10 D.C.R.C., Sur 95. T.D. 2,598 ft.; P.B. 1,625 ft.; set csg.; comp. gasser.

Seven Sisters—Duval County

W. W. Blocker No. 3 Benton-Coopwood, Sur. 382. Spdd.

Humble O. & R. Co. No. 2 Dowdy. Drlg. 2,647 ft.

Humble O. & R. Co. No. 41 Smith, Sur. 382. Testing 2,460 ft.

Humble O. & R. Co. No. 37 Smith, Sur. 382. T.D. 2,450 ft.; testing.

Reliance Oil & Roy. Co. No. 19 Drummond, Sur. 308. Comp. 480 B.P.D.; T.D. 2,502 ft.

Texas Co. No. 8 Badgley, Sur. 307. Drlg. 120 ft.

Wellington Oil Co. No. 23 Welder, Sur. 383. Loc.

Wellington Oil Co. No. 27 Wellington, Sur. 383. Loc.

Weatheimer & Daube No. 28 Campos, Sur. 224. R.U.

Pearsall—Frio County

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104. T.D. 6,230 ft.; set csg. 6,119 ft.; blew out making est. 10,000,000 ft. gas; closed in; flowed 1,500,000 ft. gas and dist.; fishing cable and tools.

Amerada Pet. Corp. No. 7 Oppenheimer, 1,320 ft. W line, 330 ft. S line, Gibson Sur. 16. (W.O.); swbg. in 5,573 ft.

North Pettus—Goliad-Karnes Counties

Bostex Oil Co. No. 3 Runge Loan Bank, 330 ft. SW & SE lines lease, Meyer Sur. Sd. 3,730-35½ ft.; set csg. 3,718 ft.; W.O.C.

Bostex Oil Co. No. 4 Runge Loan Bank, 330 ft. SE line, 810 ft. NE line, lease, B.&B. Sur. 26. Comp. 200 B.P.D. on ¼-in. choke; T.D. 3,715 ft.

Diamond Halff Oil Co. No. 1-C Gillette, 745-ac. tr., J. Gomez Sur. Sd. 3,668-3,876 ft.; completing.

Sun Oil Co. No. 7 Scarbrough, B.&B. Sur. Sd. 3,682-96 ft.; R.U. to pump.

Clark—Guadalupe County

J. E. Clark No. 1 Grimm, G. DeWitt Sur. Loc.

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.

Marts & Bevins No. 2 Grim, G. DeWitt Sur. 13. Drlg. plug. 2,426 ft.

Darst Creek—Guadalupe County

Freeman Oil Co. No. 1 Larison, G. DeWitt Sur. 13. T.D. 2,410 ft.; W.O. pump.

La Jita Corp. No. 1 Denmann, 50-ac. tr. Drk.

V. G. Schimmel No. 2 Grimm, Dewitt Sur. T.D. 2,525 ft.; W.O. pump.

Mercedes—Hidalgo County

Union Sulphur Co. No. 10 American Rio Grande L. & L. Co., Blk. 50, Tr. 2,418, N. Caprisallo Dist. T.D. 8,306 ft.; D.&A.

LaBlanca—Hidalgo County

Pantana Pet. Co. No. 1-B Engleman, Lot 8, sec. 249. Perf. 6,666-83 ft.; flw. gas and 75 B.P.D. dist.; dist. flow increasing.

Pantana Pet. Co. No. 1 MacDougall, Lot 232, sec. 249. Cg. 8,096 ft.

Samfordyce—Hidalgo-Starr Counties

E. A. Graham No. 1 Yturria Ld. & Livestock Co., Tr. 9, Porc. 100. Cg. 2,872 ft.

Harrison & Danvers No. 4-A Guerra, 30.78-ac. tr., Tr. 251, Porc. 38. Drlg. 1,623 ft.

Henshaw Bros. No. 2 Chapa, Tr. 250, Porc. 39. Sd. 2,942-54 ft.; comp.; 120 B.P.D. on ¼-in. ck.; T.D. 2,954 ft.

Young & Bonnear No. 1 Diaz, Tr. 331, Porc. 40. M.I.M.

Alworth—Jim Hogg County

French Oil Co. No. 4 Garza, Blk. 1, Sur. 269. Drlg. 526 ft.

Colorado—Jim Hogg County

J. H. Meek, No. 3-A Martinez, 1,650 ft. E line, 1,550 ft. N line, Sur. 623. Drlg. 2,512 ft.

Bentonville—Jim Wells County

Danciger Oil Co. No. 1 Bird, de la Garcia grant. M.I.M.

La Jita Corp. No. 3 Bowers, 990 ft. N and E lines, sec. 14. Fsg. 4,888 ft.

Stanolind O. & G. Co. No. 1 Bird, de la Garcia grant. R.U.

King—Jim Wells County

Stanolind O. & G. Co. No. 3 King, 990 ft N. 330 ft. E. NE cor. sec. 20, in sec. 9. Spudded.

Premont—Jim Wells County

Francis & Simonton No. 1 A. Lozana, Jr., 185 ft. E line, 165 ft. S line, Lot 111, sec. 36. Cg. 2,331 ft.

Tom Graham and Gilcrease Oil Co. No. 1 Escobar, 330 ft. N and E lines, Blk. 4, sec. 25. Buffalo-Tex Subd., Escobas ranch. Drlg. sh. 3,892 ft.

Tom Graham No 1 Wm. Singer, C Lots 71 and 74, Sur. 76. T.D. 3,400 ft. P.B. 3,163-67 ft.; perf. 3,157-64 ft.

W. F. Morgan No. 1 Laughlin, C Lots 39 and 42, sec. 72, Sur. 231. Drlg. 820 ft.

Sandia—Jim Wells County

Geo. Smith No. 1 Wade, Lot 2, Wade ranch. Drlg. 2,283 ft.

J. E. Walsh No. 2 Wade, Lot 2, Blk. C, Bode Subd. Tstg. 2,910 ft.

Kingsville—Kleberg County

Great States Oil Co. No. 1 Kivlin, Blk. 4, sec. 39. Drlg. 1,874 ft.

Lucas—Live Oak County

Houston Oil Co. No. 37 Cartwright, 1,300 ft. W, 300 ft. S. No. 35. F. Botillo Sur. Drlg. sh. and L. 3,559 ft.

Oakville—Live Oak County

Ohio Fuel Supply Co. No. 1 Goebel, 251-ac. tr, L. Romero Sur. Drlg. 1,360 ft.

Simmons O. & G. Co. No. 1 Reagan, Romero Sur. Cg. 1,706 ft.

Calliham—McMullen County

W. P. Howard No. 6 Claunch, M. Hely Sur. Cg. 427 ft.

R. P. Lightfoot No. 9 Lark, Blk. 118, Scrugham Sur. Loc.

Loma Oil Co. No. 107-A Jacob, Sur. 514. Spudding in.

National Pet. Co. No. 2-B Lark, Jacob Sur. Drlg. 135 ft.

Rhodes—McMullen County

Humble O. & R. Co. No. 3 Edrington, SE¼ Sur. 59. Drlg. 2,637 ft.

Ina—Medina County

Ina O. & R. Co. No. 3 Viola Wilson, Durst Sur. Drlg. 400 ft.

Agua Dulce—Nueces County

Lockhart Bros. No. 1 Elliff, 4,501 ft. E line, 466 ft. S line, 3,054.9-ac. tr., Antonio Longorio Gr. Drlg. 5,217 ft.

Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206. S.D. 6,885 ft.; blew out and closed in; to attempt comp. through drill stem.

Texon Drlg. Co. No. 2 Elliff, 5,580 ft. S line, 466 ft. E line, 3,054.9-ac. tr., Antonio Longorio Gr. Loc.

Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Lds., Palto Alto Gr. Set 16-in. csg. 300 ft.; drlg. 2,816 ft.

United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Drlg. 3,786 ft.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. R.U.

Tide Water Oil Co. et al No. 7 Monnig, 1,866 ft. N of No. 2, S. Sanchez Sur., deep test, Long Lake field. Drlg. 1,900 ft.

Angelina County

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Diboll. Drlg. 2,075 ft.

W. A. Stone et al No. 1 Southern Pine Lbr. Co., B. J. Thompson Sur., 8 mi. SE Lufkin. S.D. 450 ft.

Summeral-Harris et al No. 1 M. L. Condrea, D. D. Maroney Sur., ¾ mi. W of Huntington. S.D. 825 ft.

Cherokee County

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 6,000-ft. test. Loc.

Dallas County

Mauldin Oil Co. No. 1 W. E. Howell, S. Layton Sur., 8 mi. E of Grapevine, 6 mi. W of Longmire. R.U.

Clara Driscoll—Nueces County

Blanco Oil Co. and Buchanan No. 1 W. S. Gandy, 330 ft. S and W lines, E½ sec. 60. Drlg. 5,997 ft.

W. D. Hines No. 1-A Sevier, W½ sec. 60, Paul Subd. Comp.; 52 B.P.D. dist. on ¼-in. ck.; T.D. 5,675 ft.; C.P. 1,600 lbs.

Hiram Reed No. 2 Roper, C Lot 1, sec. 108. Perf. 3,901-05 ft.; gas and wtr.; to P.B. and perf. in 3,800-ft. sd. W.O.W.

H. M. Reed No. 1 Holloway, 330 ft. S and E lines, 51.8-ac. tr., sec. 108. Perf. 3,902-04 ft.; flw. brackish wtr.

Wellington Oil Co. No. 1-A Sevier, 125-ac. tr., Wm. Gamble Sur. Set csg.; T.D. 6,075 ft.; perf. 5,422-27 ft.; reperf. lower.

Wellington Oil Co. No. 9 Sevier, Wm. Gamble Sur. Sd. 3,793-3,802 ft.; comp.; no gauge.

Wellington Oil Co. No. 10 Sevier, 254-ac. tr., Wm. Gamble Sur. Spudded.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 1 Cordez, C Lot 12, Blk. 48. R.U.

Humble O. & R. Co. et al No. 4 Phillips, C Lot 1, Blk. 55. T.D. 6,650 ft.; sd. 6,634-50 ft.; set csg.; W.O.C.

Humble O. & R. Co. et al No. 5 Phillips, C Lot 6, Blk. 48. Drlg. 2,106 ft.

Humble O. & R. Co. et al No. 2 Robertson, Lot 24, Blk. 47. Drlg. sh. 1,259 ft.

Humble O. & R. Co. et al No. 1-A Thompson, Lot 3, Blk. 55. Drlg. 2,019 ft.

Humble O. & R. Co. et al No. 2 Webb, Blk. 47. Comp.; 149 B.P.D. on ¼-in. ck.; set csg. 6,657 ft.

S. Paul No. 1 Moulter, Blk. 16, sec. 41, Encinal Garden tracts. Loc.

King—Nueces County

Stanolind Oil & Gas Co. No. 3 R. King, sec. 9, King Farm Subd. Spudded.

Saxet Heights—Nueces County

W. C. Brady No. 1 Guy, C Lot 45, Country Club Addn. M.I.M.

Callihan Bros. and Whitley No. 1 Hartley, Villareal Sur. R.U. and S.D.

Genro & Roosth No. 1 Caddell, C Lots 3, 4 and 5, Blk. "D," Harbor View Ests. Sd. 4,045-80 ft.; perf. 4,054-60 ft.; comp.

Long et al No. 1 Wallace, 200 ft. S. line, midway E and W lines tr., Villareal Sur. T.D. 4,085 ft.; perf. 4,063-67 ft.; T.D. 4,105 ft.

Chas. F. McGrew No. 3 Kelly, 19-ac. tr Sd. 4,060-90 ft.; set csg.; S.O. jetted S.W.; S.D.

W. N. Paul No. 2 Schallert, C Blk. "C," Harbor View Addn. S.D. 1,800 ft.; W.O.

Pedernal Oil Co. No. 1 John, Blk. 14, Oak Park Addn. S.D. 4,110 ft.; orders

Port Oil & Gas Co. No. 3 Corpus Christi College, 500 ft. S No. 2, Villareal Sur. Set csg. 506 ft.; W.O.C.

Port O. & G. Co. No. 10 Country Club, Lot 13, 26½-ac. tr., Rincon del Oso Sur. Sd. 4,064-88 ft.; swbg. in.

Renwar Oil Co. and Maryland Corp. No. 2 Golla, 19.3-ac. tr., Villareal Sur. Sd. 4,048-90 ft.; set csg.; perf. 4,078-83½ ft.; comp.

Sam Wilson No. 1 McCaughan, Blk. 2, Oak Park Addn. Sd. 4,073-80 ft.; set csg.; W.O.C.

Saxet—Nueces County

Allen & Morris No. 1 Hocker & Sevier, 330 ft. N Shell Rd., 330 ft. W line, 100-ac. tr. Sd. 4,823-40 ft. Tested 600 ft. oil Set 7-in. csg. 4,833 ft.; W.O. pmp.

C. Andrade No. 2 Rand Morgan, Sur. 592. Sd. 4,554-75 ft.; completing.

Baltic Drlg. Co. (Reesto) No. 2 Harmon, 50 ft. SW No. 1, Sur. 416. S.D. 5,753-62 ft.; perf. 5,760-65 ft.; comp.

Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.

Ben-Tex Oil Co. No. 2 Harmon, 990 ft. S line, 330 ft. E line, 50-ac. tr., Sur. 416. Drlg. 5,347 ft.

Bryant & Howell No. 1-A Kocurek, 330 ft. N line; 580 ft. E line 53-ac. tr., Sur. 25. T.D. 4,601 ft.; set csg. 4,423 ft.

R. B. Bryant No. 7 Scoggins, 94-ac. tr., Sur. 315. Oil sd. 4,456-62 ft.; comp.; 144 B.P.D. on ⅛-in. ck.; T.D. 4,468 ft.

R. B. Bryant No. 8 Scoggins, 94-ac. tr., Sur. 315. Spudded.

W. W. Chapman No. 5 Morgan-Clark, Sur. 405. (W.O.); old T.D. 6,401 ft.; washing to bottom.

Conservative Oil Co. No. 1 R. Kleberg, NE¼, sec. 409. Drlg. 2,016 ft.

Conservative Oil Co. No. 4-B Morgan, 330 ft. N line, 1,984 ft. W line, Ise., Sur. 403. Drlg. 6,540 ft.

Conservative Oil Co. No. 3-B Rand Morgan, 330 ft. N and W lines, Ise., Sur. 403. Sd. 5,824-30 ft.; comp.; no gauge.

Crown Central Pet. Corp. (Wynne Drlg. Co.) No. 4-A Morgan, 80-ac. tr., 160-ac. tr., Surs. 592 and 315. Sd. 4,448-51 ft.; set csg. 4,446 ft.; W.O.C.

Tom Graham No. 2 Harmon, 330 ft. S and E lines, 34-ac. tr., Sur. 416. Sd. 5,831-33 ft.; comp.; no gauge.

Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311, D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; cleaning into pits.

Great States Oil Co. and Violet Oil Co. No. 8 McGregor-Belk, Sur. 311. Sd. 4,831-43 ft.; comp.; 107 B.P.D. on ⅛-in. ck.; T.D. 4,844 ft.

H. H. Howell No. 1 Hutchins, 330 ft. N and E lines, 80-ac. tr., Sur. 416. Drlg. 4,623 ft.

Hiawatha Oil Co. No. 6 Hutchins-Stillwell, Blk. 30, Sheppard Farm Lots. T.D. 5,848 ft.; comp.; 113 B.P.D. on ⅛-in. ck.

Hiawatha Oil Co. No. 4-A Smith, 98-ac. tr., Sur. 500. R.U.

W. B. Hinton No. 4 Cole, 330 ft. N and W lines, 60-ac. tr., Villareal Sur. Sd. 4,867-76 ft.; T.D. 4,881 ft.; jetting.

W. B. Hinton No. 5 Cole, 330 ft. N line, midway between Nos. 3 and 4, 60-ac. tr., Villareal Sur. Loc.

Houston Oil Co. No. 12 McGregor, 135-ac. tr., Sur. 582. W.O. rig.

Houston Oil Co. No. 14 Morgan, 2,310 ft. S line, 330 ft. W line, 493-ac. tr. T.D. 4,865 ft.; rng. tbg.

Houston Oil Co. No. 16 Morgan, 492-ac. tr., sec. 7, Rge. 5. Sd. 4,546-51 ft.; set csg.; W.O.C.

Magnolia Pet. Co. No. 5 Walton, Page Lds. Sur. Spudded.

Maryland Corp. No. 1 Stillwell-Sagarin, 4.4-ac. tr., Sur. 500. Spudded.

Marland Corp. No. 4-B Morgan, Sur. 315. T.D. 4,437 ft.; comp. 132 B.P.D. on 5/32-in. ck.

T. P. Morgan & Associates No. 5 Morgan, NE¼, Sur. 405 (workover). R.U. to dpn.; drlg. 6,517 ft.

Oso Drillers, Inc., No. 4 Roark, 660 ft. E line, 1,200 ft. S line, 106-ac. tr., Villareal Gr. Sd. 4,840-48 ft.; tstg.; S.O.

Pan American Prod. Co. No. 6-A Morgan, 330 ft. N and W line, 99-ac. tr., Sur. 403. Sd. 5,796-5,813 ft.; set csg. 5,796 ft.; comp.; 155 B.P.D. on ⅛-in. ck.

Pan American Prod. Co. No. 8-A Morgan, 89-ac. tr., Sur. 403. Loc.

Pan American Prod. Co. No. 5-D Morgan, 330 ft. S and E lines, W½, SW¼, sec. 405. T.D. 5,825 ft.; set csg. 5,816 ft.; squeeze job.

Pan American Prod. Co. No. 3-B Sagarin, Sur. 500. Sd. 5,830-48 ft.; set csg.; W.O.C.

Pan American Prod. Co. No. 4-B Sagarin, Sur. 500. R.U.

Fan American Prod. Co. No. 3-B Smith. Sd. 5,830-48 ft.; set csg. 5,848 ft.; W.O.C.

Pan American Prod. Co. No. 2 Solar Sevier, 140-ac. tr., Sur. 311. Drlg. 5,226 ft.

Phillips Pet. Co. No. 4 Morgan, Sur. 405. Comp.; 132 B.P.H. on 5/32-in. ck.; T.D. 6,740 ft.

Renwar Oil Co. and Andrade No. 8 McGregor Belk, 330 ft. N and E lines of Ise., McGregor Sur. Sd. 4,831-43½ ft.; W.O.C.

Renwar & Maryland No. 6 Morgan, Sur. 315. R.U.

Republic Nat. Gas Co. No. 1 P. W. Alexander, 32.35-ac. tr., rec. 9, Rge. 5. Drlg. 6,384 ft.

Republic Nat. Gas Co. No. 3 A. Donigan, 240-ac. tr., secs. 6 and 7, Rnge. 5. R.U.

Republic Nat. Gas Co. No. 2 Ordner, 219-ac. tr., Sur. 403. Set csg. 5,831 ft.; comp. 117 B.P.D. on 5/32-in. ck.

Republic Nat. Gas Co. No. 3 Ordner, 100-ac. tr., sec. 403, Schaffer Farm Lots. Drlg. 6,087 ft.

Richardson Pet. Co. No. 14 Cain & Secrist, Lot 23, Russell Farm Lots. Sd. 4,448-50 ft.; T.D. 4,456 ft.; comp.; no gauge.

Richardson Pet. Co. No. 2 Meredith, Blk. 40, Sheppard Farm Lots. R.U.

Richardson Pet. Co. No. 5 Quiros, 80-ac. tr., Sur. 311. Sd. 5,831-44 ft.; comp.; no gauge.

Southern Minerals Corp. No. 7 Bliss, 120-ac. tr., Sur. 406. (W.O.); R.U. to D.D.; old T.D. 5,827 ft.

Southern Minerals Corp. No. 9 Smith, Lot 5, Sheppard Farm Tracts. Sd. 4,543-50 ft.; perf. csg. 4,543-47½ ft.; comp.

Southern Minerals Corp. No. 10 Smith, Lot 5, Sheppard Farm Lots. Set csg. 915 ft.; W.O.C.

Stamex O. & G. Co. No. 1 Cox & Cryder, 330 ft. N line, 990 ft. E line tr., Sur. 166 and 316. T.D. 4,643 ft.; D.&A.

T & T. Oil Co. No. 2 Cain & Secrist, Blk. 23, J. C. Russell Farm Lots. Sd. 4,427-38 ft.; comp.; no gauge.

Taylor Pet. Co. No. 1 Baldwin, 200-ac. tr., Blk. 21, Russel Farm Lots. Drlg. 5,521 ft.

Texon Drlg. Co. No. 1 Carter, 330 ft. N

and E lines lse., Sur. 316. Sd. 4,428-42 ft.; T.D. 4,443 ft.; comp.

Texon Drlg. Co. No. 2 Carter et al, 200-ac. tr., Sur. 316. Set surf. csg.; W.O.C.

Texon Drlg. Co. No. 6 Carter, 219-ac. tr., Sur. 316. Sd. 4,445-50 ft.; set 7-in. csg.; comp.; no gauge.

Texon Drlg. Co. No. 1 Buckholt, 330 ft. S and E lines, 19.14-ac. tr., Sur. 402 and 316. T.D. 4,459 ft.; perf. at 4,000 ft.; ran tbg. 3,975 ft.; comp.; gasser.

W.A.R. Oil Co. No. 3 Hoelscher, Blk. 22, Russell Farm Lots. Sd. 4,455-59 ft.; S.D.

W.A.R. Oil Co. No. 4 Hoelscher, Blk. 22, Sheppard Farm Lots. Set surf. csg.; W.O.C.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E line, 1,280 ft. N line, sec. 12, Stratton Subd. R.U. and S.D.

Plymouth—San Patricio County

Humble O. & R. Co. No. 5 Bevely, Blk. 1, sec. 35. M.I.M.

Magnolia Pet. Co. No. 11 Corpus Christi Bank, sec. 24, Fourth Addn., Taft Lds. Drk.

Plymouth Oil Co. No. 65-C Welder, sec. 71. Tstg. 6,575 ft.

Plymouth Oil Co. No. 66-C Welder, sec. 71. T.D. 5,619 ft.; sd. 5,599-5,619 ft.; C.O.

Plymouth Oil Co. No. 67-C Welder, sec. 48. M.I.M.

Sun Oil Co. No. 4 Rosson, sec. 35, Fourth Addn. Set surf. csg.; W.O.C.

Taft Field—San Patricio County

Atlantic Ref. Co. No. 3 Pullin, 330 ft. N line, 380 ft. W line, 40-ac. tr., Lot 4, sec. 1, Second Addn, R.U.

Cage Prod. Co. No. 5 Mayo, 330 ft. S and W lines lse., J. Fessenden Sur. Cg. 4,-847 ft.

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. Loc.

Conroe Drlg. Co. No. 6 Pullin, Lot 4, sec. 1. Drlg. 3,256 ft.

Eaves Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; W.O.C.

Humble O. & R. Co. No. 2 Flynn, Lot 1, sec. 1, Second Addn. Comp.; 336 B.P.D. on ¼-in. ck.; sd. 3,990-95 ft.

Humble O. & R. Co. No. 13 Mayo, 799 ft. S line, 330 ft. E line, 320-ac. tr., Ottman Sur. Set csg. 4,930 ft.; W.O.C.

Los Olmos—Starr County

Ted Stone No. 1 Kelsey-Bass, Porc. 87, J of Camargo. Sd. 400-08 ft.; tstg.

O'Hern—Webb County

Hamil & Smith No. 18 Benavides, Blk. 438, Hale Subd. Loc.

Hamil & Smith No. 19 Benavides, Hale Subd. Drlg. 2,217 ft.

Hamil & Smith No. 28 Benavides, O'Hern Subd. Tstg. sd. 2,924-36 ft.

Hamil & Smith No. 36 Benavides, Hale Subd. Drlg. 426 ft.

Hamil & Smith No. 37 Benavides, O'Hern Subd. Drlg. 2,521 ft.

Hamil & Smith No. 40 Benavides, Hale Subd. Comp.; 255 B.P.D.; sd. 2,923-34 ft.

O. W. Killam No. 2 Bruni, Sur. 585. Drlg. 2,816 ft.

Hamil & Smith No. 41 Benavides, Hale Subd. Set csg. 2,934 ft.; W.O.C.

Magnolia Pet. Co. No. 18 Seacord-Benavides, Blk. 8, O'Hern & Seacord Subd. T.D. 2,836 ft.; comp.; 50 B.P.D.

H. M. Reed No. 4 Benavides, Blk. 396 Hale Subd. Swbg. 2,916 ft.

Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.

Sun Oil Co. No. 2-A Benavides, Blk. 439, Hale Subd. Set csg. 2,932 ft.; W.O.C.

Texas Co. No. 2-A Benavides, Blk. 371, Hale Subd. T.D. 2,915 ft.; set csg. 2,902 ft.; W.O.C.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S½, Blk. 22, Qandudo Grant. M.I.M.

Escobas—Zapata County

Daubert & Lipscomb No. 3 Santos, Share 6, Fansler Part. Drlg. 1,126 ft.

Sam Evans No. 1 Garza, Blk. 19 Zorn ranch. Sd. 1,316-23 ft.; comp.; 25 B.P.D.; T.D. 1,323 ft.

B. W. Roscoe No. 6 Bustamente, 197.8-ac. tr., Sh. 33. Loc.

B. W. Roscoe No. 8 Bustamente, 197-ac. tr., Sh. 33. T.D. 1,258 ft.; comp.; 60 B.P.D.

B. W. Roscoe No. 9 Bustamente, 197-ac. tr., Sh. 33. T.D. 1,278 ft.; comp.; 75 B.P.D.

B W. Roscoe No. 7 Garza, Share 33, Fansler Part. Drlg. 736 ft.

Texas Co. No. 95 Jennings, Cerrito Blanco Gr. Drlg. 1,712 ft.

Zapata Corp. No. 6 Garza, Blk. 20, Douglas Subd. Comp.; 60 B.P.D.; T.D. 1,-219 ft.

Haynes—Zapata County

J. D. Long No. 1 Phelps, Villa Gr. R.U.

Magnolia Pet. Co. No. 5 Haynes, Blk. 7, Haynes Subd. T.D. 1,482 ft.; S.D.

Magnolia Pet. Co. No. 9 Haynes, Blk. 7, T.D. 1,159 ft.; comp.; 10 B.P.D.

Magnolia Pet. Co. No. 12 Haynes, Blk. 7, Haynes Subd. Comp.; 60 B.P.D.; T.D. 1,105 ft.

Magnolia Pet. Co. No. 14 Haynes, Blk. 7, Haynes Subd. Drlg. 377 ft.

Magnolia Pet. Co. No. 16 Haynes, Blk. 7, Haynes Subd. Set csg. 1,127 ft.; W.O.C.

United Prod. Co. No. 16 Haynes, Blk. 13, Gunby Subd. T.D. 1,046 ft.; W.O.P.E.

United Prod. Co. No. 17 Haynes, Blk. 13, Gunby Subd. Set csg. on sd. 1,001 ft.; W.O.C.

United Prod. Co. No. 18 Haynes, Blk. 13, Gunby Subd. Drlg. 856 ft.

United Prod. Co. No. 19 Haynes, Blk. 13. W.O.P.E. 1,054 ft.

Valley Osage Oil Co. No. 4 Haynes, Blk. 14, Haynes Subd. T.D. 1,117 ft.; comp.; 100 B.P.D.

Valley Osage Oil Co. No. 7 Haynes, Blk. 14, Haynes Subd. Comp.; 95 B.P.D.; T.D. 1,056 ft.

Falls County

A. H. Bell et al No. 1 C. L. Trice, F. Mayham Sur., 1 mi. E of Lott. S.D. 876 ft.

R. M. Hefflin, No. 1 T. E. Battle, Mari Sur., 3 mi. SW of Marlin. S.D. 2,082 ft.

Thirteen Oil Co. No. 1 H. R. Roberts, N. Slatter Sur., 6 mi. SE of Lott. Pecan Gap 1,480 ft.; drlg. 2,170 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. S.D. 2,535 ft.

Styles & Smith No. 1 R. Stewman, J. W. Clark Sur., 2 mi. SE of Trenton. S.D. 588 ft.; elev. 724 ft.

Freestone County

Everett Drlg. Co. No. 1 O. W. Killian, E. J. Robins Sur., 6½ mi. SE of Fairfield. Top Pecan 3,503-3,719 ft.; S.D. 4,400 ft.

Yancey et al No. 1 Scott, Church Lot, H. Awalt Sur., W of Stewartsville. S.D. 3,870 ft.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. Drk.

Superior Oil Co. No. 1 P. D. Paul, Mary Latham Sur., 4½ mi. NE of Quinlan. Drlg. 2,064 ft.

Texola Land Corp. No 1. J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. Loc.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos. King Sur. Top Georgetown 354 ft.; S.D. 2,500 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. Drlg. 3,700 ft.

Rains County

Humble and Tide Water Oil Co. No. 1 Easter, R. Hotchkiss Sur., 5 mi. NW Alba. S.D. 7,655 ft.

Red River County

Carpenter Oil Co. No. 1 R. E. Anderson, S. W. Sims Sur., 3 mi. N of Clarksville. S.D. 2,018 ft.

Carpenter Oil Corp. No. 1 J. M. Roberts, 330 ft. N line of J. Ware Sur., 400 ft. SE of Cleary No. 1 Mowery dry hole, 10 mi. NE of Clarksville. M.I.R.

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 80 ft.

M. Petroff et al No. 1 R. G. Morris, J. Guest Sur., 2 mi. W of Detroit. S.D. 20 ft.

Robertson County

J. E. Mills No. 1 T. Congelosi, C of 75-ac. tr. in G. A. Nixon Sur., 3½ mi. SW of Hearne. S.D. 2,250 ft.

Van Zandt County

Stroud & Lowe No. 1 P. L. McNeill, 600 ft. S and 150 ft. W of 104-ac., J. W. Guest Sur., 4 mi. N of Ben Wheeler. S.D. 20 ft.

Wood County

G. W. Nix et al No. 1 E. A. Russell, J. Delap Sur., SW cor. of county. S.D. 600 ft.

EAST TEXAS

(Border Counties)

Cass County

W. D. Ambrose No. 1 W. D. Chew, Robt. Trammel Sur., Chew tr. Drlg. 1,950 ft.

W. D. Ambrose No. 2 W. D. Chew, Robt. Trammel Sur., Chew tr. Drlg. 1,900 ft.

American Lib. No. 6-A Baugus, J. H. Rives Sur., Lot 9. Drlg. 4,050 ft.

American Liberty No. 4 J. Wiley, C E and W. line, 56-ac. tr., J. Davenport Sur. Loc.

American Liberty No. 5 J. Wiley, SW cor. lse., J. Davenport Sur. Cg. 5,940 ft.

Gulf Prod. Co. No. 3 Dawson, J. H. Rives Sur. Drlg. 3,279 ft.

H. L. Hunt No. 1 I.N.&C.L. Shelton, SE cor. 202-ac. tr., J. Davenport Sur. T.D. 6,050 ft.; W.O.S.R.

W. F. Lacey No. 1 J. Lewis, NW cor. B. E. Echols 17.4-ac. lse., H. Holbert Sur. Comp.; flw. 124 B.P.D.; T.D. 6,079 ft.

Magnolia Pet. Co. No. 1 Allday Est., P. Evans Sur., SE cor. 87-ac. tr. Drlg. 5,885 ft.

Magnolia Pet. Co. No. 2 Allday Est., P. Evans Sur. Drlg. 4,271 ft.

Magnolia Pet. Co. No. 5 L. Haywood, P. Evans Sur., 625 ft. NE of No. 4. Drlg. 5,431 ft.

Magnolia Pet. Co. No. 6 L. Haywood, P. Evans Sur., 508 ft. NW of No. 1. Drlg. 5,414 ft.

Magnolia Pet. Co. No. 1 Lewis & Wilks, A. Archer Sur., SE cor. 20-ac. tr. Drlg. 6,035 ft.

Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.

Magnolia Pet. Co. No. 4 Noel Est., W. B. Hughes Sur. Drlg. 3,317 ft.

Magnolia Pet. Co. No. 5 Rives, SE cor. John Collum Sur. P.B. 5,968 ft.; arg. test.

Magnolia Pet. Co. No. 1 H. F. Walker, Wilson Robinson Sur., SE cor. 102-ac. lse. 7-in. cmtd. 6,035 ft.; T.D. 6,070 ft.; W.O.C.S.

Magnolia Pet. Co. No. 2 H. F. Walker, Wilson Robinson Sur., SE SE cor. 102-ac. lse. Comp.; flw. 198 bbls. in 8 hrs.; T.D. 6,055 ft.

Magnolia Pet. Co. No. 3 H. F. Walker, Wilson Robinson Sur., NW cor. 102-ac. lse. Drlg. 5,997 ft.

Magnolia Pet. Co. No. 4 H. F. Walker, Wilson Robinson Sur., NE cor. 102 ac. lse. Drlg. 5,726 ft.

Magnolia Pet. Co. No. 5 H. F. Walker, Wilson Robinson Sur., SW cor. 102-ac. lse. Drlg. 5,965 ft.

R. W. Norton No. 4 J. T. Moore, Wm. R. Myers Sur. 7-in. cmtd. 5,981 ft.; T.D. 5,995 ft.; W.O.C.S.

Ohio Oil Co. No. 5 R. P. Willis, S.F.I.W. Sur. No. 1,263. Drlg. 5,700 ft.

Ohio Oil Co. No. 8 Willis, S.F.I.W. No. 1,263 Sur. Drlg. 210 ft.

Ohio Oil Co. No. 9 R. P. Willis, S.F.I.W. Sur. No. 1,263, SW of No. 3. Comp.; flw. 460 B.P.D.; T.D. 5,990 ft.

Ohio Oil Co. No. 12 R. P. Willis, SE cor. 320-ac. tr., S.F.I.W. Sur. No. 1,263. Gas well; stg.; T.D. 5,924 ft.

Ohio Oil Co. No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263. Loc.

Ohio Oil Co. No. 14 R. P. Willis, S.F.I.W. Sur. No. 1,263. Drlg. 2,060 ft.

Ohio Oil Co. No. 18 R. P. Willis, S.F.I.W. Sur. No. 1,263, 1,750 ft. W of No. 12. Drlg. 3,675 ft.

Phillips Pet. Co. No. 1 Chew, SE cor. 207-ac. lse., Robt. Trammel Sur. Drlg. 6,-167 ft.

Phillips Pet Co. No. 2 Chew, 1,460 ft. N, 326 ft. W, SE cor. W. D. Chew 207-ac. lse., Robt. Trammel Sur. P.B. from 6,-161 ft. to 6,119 ft.; tstg.

Phillips Pet. Co. No. 5 Farrier, Wm. R. Myers Sur. Drlg. 2,645 ft.

Phillips Pet. Co. No. 6 Farrier, Wm. R. Myers Sur. Drlg. 4,350 ft.

Phillips Pet. Co. No. 7 Farrier, Wm. R. Myers Sur. R.U.

Phillips Pet. No. 8 Farrier, Wm. R. Myers Sur. Loc.

Phillips No. 3 Farrier, Wm. R. Myers Sur., Sur., 220-ac. lse. Drlg. 5,434 ft.

Phillips No. 4 Farrier, Wm. R. Myers Sur., 933 ft. W of No. 2. 7-in. cmtd. 6,131 ft.; T.D. 6,135 ft.; W.O.C.S.

Phillips Pet. Co. No. 1 Skinner, Hutchinson tr., S.F.I.W. Sur. No. 1,025. Drlg. 5,286 ft.

Spray Oil Co. No. 2 Scott Adams, 25-ac. tr., Robt. Trammel Sur. 7-in. cmtd. 5,-976 ft.; T.D. 5,992 ft.; W.O.C.S.

Texas Co. No. 3 W. M. Hall, Alex Archer Sur. Drlg. 4,530 ft.

Texas Co. No. 4 W. M. Hall, Alex Archer Sur. Cg. 6,035 ft.

Texas Co. No. 1 D. Lewis, A. Archer Sur. Cg. 2,985 ft.

Texas Co. No. 2 J. B. McLeod, W. A. Elliott Sur. Drlg. 5,908 ft.

Texas Co. No. 6 N. A. Rambo, Cass County Sch. Ld. Sur. R.U.

Texas Co. No. 8 N. A. Rambo, Cass County Sch. Ld. Sur. 9-in. cmtd. 2,225 ft.; W.O.C.S.

Tide Water No. 1 W. D. Chew, Robt. Trammel Sur., 150 ft. N of S line, midway between E and W lines of 20-ac. lease Derrick

United Prod. Co. No. 1 G. W. Bibby unit, A. Archer Sur. Drlg. 2,220 ft.

United Prod. Co. No. 2 Bivens Unit, Jas Davenport Sur. 7-in. cmtd. 6,001 ft.; T.D. 6,021 ft.; W.O.C.S.

United Prod. Co. No. 3 J. A. Bewley, H. Holbert Sur. Drlg. 400 ft.

United Prod. No. 4 J. A. Bewley, H. Holbert Sur. Drlg. 3,260 ft.

United Prod. No. 5 J. A. Bewley, H. Holbert Sur. Drlg. 322 ft.

United Prod. No. 1-A J. H. Bewley, H. Holbert Sur. 10-in. cmtd. 2,275 ft.; W. O.C.S.

United Prod. No. 2-A J. H. Bewley, H. Holbert Sur. 13-in. cmtd. 260 ft.; W. O.C.S.

United Prod. No. 5 G. W. Bibby Unit. 9-in. cmtd. 2,172 ft.; W.O.C.S.

United Prod. No. 9 Rambo Unit, J. Davenport Sur., 545 ft. S, 400 ft. E of most northerly NW cor. Rambo Unit. Drlg. 4,736 ft.

United Prod. Co. No. 10 Rambo, J. Davenport Sur. Drlg. 4,441 ft.

United Prod. Co. No. 9 J. T. Stewart Unit John Collom Sur., 81-ac. tr. Comp.; flw. 21 B.P.H.; T.D. 6,040 ft.

United Prod. Co. No. 10 J. T. Stewart Unit, John Collom Sur., 48-ac. tr. 7-in. cmtd. 6,028 ft.; T.D. 6,045 ft.; W.O.C.S.

United Prod. Co. No. 3 Tyson Unit, J. H. H. Rives Sur. T.D. 6,035 ft.; tstg.

United Prod. Co. No. 5-A Tyson, J. H. Rives Sur. 9-in. cmtd. 2,198 ft.; W.O. C.S.

United Prod. Co. No. 6-A Tyson, J. H. Rives Sur. Drlg. 3,284 ft.

United Prod. No. 2 S. B. Willis, Wilson Robinson Sur. No. 908. Drk.

United Prod. No. 3 S. B. Willis, Wilson Robinson Sur. No. 908. Loc.

Vaughn Prod. Co. No. 2 Willis, S.F.I.W. Sur. No. 1,263. 13-in. cmtd. 216 ft.; W. O.C.S.

Harrison County

Geyer Oil Co. No. 1 Alex Moore, 5 mi. SW of Waskom, C. W. Fields Sur. Drlg. 2,240 ft.

H. H. Roberts et al No. 1 Z. Douglas, S Fields Sur. T.D. 2,485 ft.; W.O.C.S.

Marion County

Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr. Drlg. 4,450 ft.

Tom Bell et al No. 1 David Lane, SW C Log 2, Jones Sur. T.D. 72 ft.; S.D.

F. R. Freet et al No. 1 Barnham, Robt. Potts Sur. Drk.

Sam Lanier No. 1 Lucey Rives, SE cor. M. G. Wall Sur. T.D. 960 ft.; W.O.S.R.

Morefield & Prince No. 1 Benefield, NE cor. Robt. Potter Sur., 4 mi. W of Old City, La. T.D. 180 ft.; S.D.

Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E. cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S, 3,450 ft. E of NW cor. of R. Bennington Sur. Recmtd. 9⅝-in. csg.; core ahead; T.D. 6,075 ft.

Panola County

Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. T.D. 2,774 ft.; S.D.

Matex Oil Co. No. 1 Thomas M. Alstons, 3 mi. E of Elysian field. T.D. 5,036 ft.; W.O.

Shelby County

Mulroy-Curtain et al No. 1 Hayden, D. G. Yardt Sur. T.D. 3,182 ft. (cor.); S.D.

Potter & Rubeling O. H. Polly No. 1, Wm. Wisner Sur. T.D. 4,070 ft.; S.D.

Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. Spudding.

Red Wing Oil Co. No. 1 C. H. Herton, 54-ac. tr. in J. Dowlin Sur. S.D. 1,889 ft.

H. A. Stebbinger No. 1 Pickering Lbr. Co., on 160-ac. tr. in A. Hanson Sur. R.U.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns No. 1 G. A. Lauster A, R.R. Sur. No. A-799. Loc.

O'Donohoe-Gibson No. 1 Perkins B, sec. 11, A.T.N.C.L. Sur. Drlg. 500 ft.

Guy Scholl No. 1 Cowan, Blk. 6, J.C.S.L. Sur. A-240. Tstg.; S.S.O. 996-1,000 ft.

Clay County

Green Mt. Oil Co. No. 1 Staggs, sec. 24, A.C.S.L. Sur. Loc.

G. T. Morris No. 1 Boddy, T. Cook Sur. Drlg. 800 ft.

Collin County

Sorrell et al No. 1 D. R. Clark, J. Rowland Sur. Spudded and S.D.

Cooke County

Wm. D. Compton No. 1 P. Tucker, J. Barnett Sur. A-42. Drlg. 550 ft.

Denver P. & R. Co. No. 1 T. H. Sears, A. Houston Sur. A-500. Spdg.

B. H. Hilburn No. 1 W. A. Harris, J. Harris Sur. A-502. Fishing 1,440 ft.

Montour Prod. Co. No. 1 Cornelius, J. T. Bloomfield Sur. A-35. Drlg. 1,580 ft.

Peterson et al No. 1 J. M. Floyd, Chas De Morse Sur. A-305. S.D.

Ruble & Lowery No. 1 Dozier, Lot 12, F.C. S.L. Sur. R.U.R.

Denton County

Carlysle & Wilson No. 1 J. P. Knox, R. Howard Sur. A-542. Gas sd. 1,950-55 ft.; est. 10,000,000 ft.; S.D. for pipe.

J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 1,225 ft.

C. C. Minnick No. 1 C. N. Price, J. Doughtitt Sur. A-1,322. Fsg. 270 ft.

Oil Finance No. 1 J. S. Gambill, S.D. 1,562 ft.

J. Stogner No. 1 J. Maxwell, Jno. Morton Sur. A-792. Spudded and S.D.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas Quillian Sur. A-989. 6⅝-in. csg. 2,345 ft.; S.S.O. 3,860-65 ft.; drlg. plug.

Red Wing Oil Co. No. 1 Mulder, J. Barefoot Sur. Drlg. 150 ft.

Olson et al No. 1 D. R. Uitger, P. P. Cady Sur. A-301. Drlg. 2,810 ft.

Hardeman County

Locke & Durham No. 1 Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Loc.

Jack County

Bryson O. & G. Co. No. 1 O. Loving, T.&N.O. Sur. A-852. U.R. 6⅝-in. csg. 4,400 ft.

Danciger O. & R. Co. No. 1 Kinder, B.S.&F. Sur. A-83. Drlg. 1,301 ft.

Hamilton Pet. Co. No. 1 J. S. Rhodes, Wm. Orr Sur. A-849. Drlg. 9,675 ft.

Hanlon-Buchanan, Inc., No. 1 Calvin, R. B. Calvin Sur. P.O.P. est 150 bbls.; 1-869-89 ft. C.O. and testing.

Mrs. D. P. Jack No. 1 Hardy, T.E.&L. Sur. No. 2,555. Drk.

Sam Shabay No. 1 L. W. Fields, sec. 1, S.P.R.R. Sur. Loc.

Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1,269. Drk.

Montague County

Gutowsky & Clay No. 1 Lemon, C. E. Ham Sur. S.D. 2,550 ft.

W. E. Halbert No. 1 Petty, S. A. Southerland Sur. A-992. Drlg. 2,660 ft.

Edgar T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. Sch. Ld. R.U.R.

D. L. Monroe No. 1 Sappington, sec. 61, E.T.R.R. Sur. A-1,443. Drlg. 300 ft.

Sinclair Prairie No. 1 Hodges, Blk. 53, K. C.S.L. Sur. S.S.O. 1,750-65 ft.; P.O.P.

Throckmorton County

Canyon O. & G. Co. No. 2 Wright, D.B.B. &C. Sur. Loc.

R. J. Williams No. 1 W. B. Parrott, T.E. &L. Sur., sec. 961. S.D.O. 2,520 ft.

Wichita County

Fain-McGaha No. 1 Griffin, W. H. Spillers Sur. No. A-252. Drlg. 300 ft.

T. B. Medders No. 1 Foster, sec. 2, S.A. &M.G. Sur. Loc.

W. B. Omohundro No. 1 Cunningham, Blk. 289, W.C.S. Sur. S.D. 2,375 ft.

Palmer et al No. 1 McCarty, S. O. Fowler Sur. No. A-78. Fsg. 1,820 ft.

Wilbarger County

Rathke Oil Co. No. 1 Waggoner, H.&T.C. Sur., Blk. 33. Drlg. 2,200 ft.

Wise County

Texas-Canadian Dev. Co. No. 1 L. W. Still, Isham Epps Sur. A-267. Loc.

Young County

R. C. Albright No. 1 W. E. Steele, I.R.R. Sur. A-156. Drk.
Alexander & Long No. 1 Goldston, S.P.R.R. Sur. A-263. Drlg. 2,680 ft.
Heimerich & Payne No. 1 J. H. Rubenkoenig, J. Poitevent Sur. 9-227. Drlg. 4,207 ft.
Pitzer & West No. 1 Gathright, T.E.&L. Sur. 617. Drlg. 3,995 ft.
A. T. Strong No. 1 Davidson, R. C. Eddleman Sur. A-1,420. Drlg. 4,090 ft.
R. H. Vise No. 1 Dollins, T.E.&L. Sur. 615. Fsg. 2,633 ft.
C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1,772. Fsg. 1,040 ft.
L. W. Wickes No. 1 McCluskey, Green Sur. Drlg. 3,292 ft.
Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hills Sur. A-151. Tstg. 4,020-80 ft.

WEST TEXAS WILDCATS

Andrews County

American Liberty Oil Co. No. 1 Mayhew, sec. 23, Blk. A-51, P.S.L. Sur. Drlg. 3,500 ft.
G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 4, Blk. A-46. Drlg. 3,415 ft.
Grisham Hunter Corp. No. 1 Ratliff & Bedford. S.D. 4,805 ft.
Wm. Hannigan No. 1 Logsden, sec. 5, Blk. A-32. Cd. 4,828 ft.
Hannigan No. 1 Lotus Oil Co., 660 ft. N and E, sec. 18, Blk. A-48, P.S.L. Sur. Loc.
R. H. Henderson No. 1 J. E. Parker, sec. 25, P.S.L. Sur. A-43. T.D. 4,555 ft.; installing flow valves.
Sinclair Prairie Oil Co. No. 1 E. Cowden, sec. 12, Blk. 44, Twp. 2n, T.&P. Sur. Fsg. 4,300 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 3,690 ft.; reaming at 3,510 ft.

Crane County

Clark et al No. 1 Jordan, sec. 12, Blk. B-22, P.S.L. Sur. Drlg. 2,847 ft.
Gulf Oil Corp. No. 2 W. N. Waddell, sec. 18, Blk. B-21. T.D. 6,709 ft.; P.B. 6,186 ft.; to pmp.
Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. T.D. 3,812 ft.; U.R. csg.
Gulf Oil Corp. No. 2 Snodgrass, sec. 1, Blk. B-25. T.D. 3,550 ft.; P.B. 3,540 ft.; testing.
Moore Bros. No. 1 Barnsley, sec. 43, Blk. 32, P.S.L. Sur. S.D. 6,509 ft.

Crockett County

T. P. Coal & Oil Co. No. 1 Hair, sec. 51, Blk. 1, I.&G.N. Sur. Drlg. 481 ft.

Culbertson County

Grisham & Hunter No. 1 fee, SE cor. sec. 32, Blk. 54, P.S.L. Sur. M.I.M.

Ector County

Sinclair Prairie Oil Co. No. 2-A Johnson sec. 48, Blk. 43, Twp. 1s, T.&P. Sur. Drlg. 3,603 ft.
Stanolind O. & G. Co. No. 2-B Cowden T.D. 4,451 ft.; P.B. to 4,300 ft.; shot; C.O.

Edwards County

D. Auld No. 1 Rigsby, sec. 16, G.C.&S.F. Sur., 6 mi. N and 2 mi. W of Plateau No. 1 Hatch. Loc.
Plateau Oil Co. No. 1 Hatch. S.D. 4,753 ft

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless T.D. 2,030 ft.; U.R.
L. A. Long et al No. 1 J. L. Mayberry sec. 56, Blk. 1, H.&T.B. Sur. T.D. 3,321 ft.; P.B. 3,042 ft.; to reacidize.
Martin et al No. 1 Brown, 900 ft. N and 450 ft. W, W. E. Richardson Sur., sec. 4, Blk. R. Rig.
Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. Drlg. 160 ft.

Gaines County

Amerada Pet. Corp. No. 1 Robbins, sec. 3, Sur. A-22. Drlg. 4,717 ft.
Stanolind O. & G. Co. No. 1 Morrow. Drlg. 4,800 ft.

Glasscock County

Flasthorn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. T.D. 1,-110 ft.; C.O.
Shell Pet. Corp. No. 1 McDowell, sec. 41, Blk. 34, Twp. 2s, T.&R. Sur. Drlg. 600 ft.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83 League 38, Zavala Co. Sch. Lds. Drlg. 3,822 ft.

Hudspeth County

Haymon Krupp Oil & Ld Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. T.D. 2,635 ft.; U.R. csg.

Jeff Davis County

Joiner & Wilcox No. 1 Jones & Coffield sec. 121, Blk. 4, H.&T.C. Sur. S.D. 550 ft.

Jones County

H. D. Egger et al No. 1 O. Roberts, sec. 26, Orphan Asylum Lds. Drlg. 1,536 ft.
McMann et al No. 1 Dyer sec. 12, Blk. 2, S.P.R.R. Sur. Machine.
Oyster & Griffith No. 1 Bumpass, A. Jones Sur., 3 mi. SW of Truby. Drlg. 2,234 ft.
Oyster et al No. 1 King, N. Scott Sur. No. 14. Drlg. 599 ft.
J. L. Reeves No. 1 Kelly, C. Martinez Sur., 1½ mi. N of Hawley. S.D. 2,050 ft.
Texas Inland Oil Co. No. 1 J. K. Pittard, sec. 27, Orphan Asylum Lds. S.D. 2,035 ft.
Tiner et al No. 1 Rainwater, sec. 34, Blk. 2, S.P. Sur. Drlg. 2,370 ft.

Loving County

Mason Oil Co. No. 2 M. Kyle, sec. 20, Blk. 55, Twp. 1s, T.&P. Sur. 2,000 ft. oil in hole at 3,910 ft.

Nolan County

Dr. Robinson Co. No. 1 E. Gabler, sec. 26 Blk. X, T.&P. Sur. T.D. 2,440 ft.; U.R. csg.

Pecos County

Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. T.D. 2,290 ft.; sdwgng. pipe.
C. A. Everts No. 1 W. S. Tyrell, sec. 508, G. Montez & Duran Sur. Drlg. 2,547 ft.
Hightower Oil Corp. No. 1 Holmes, sec. 5, Blk. C-3, E.L.R.R. Sur. Fsg. 2,285 ft.
Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk. 11, G.H.&S.A. Sur.; 5,000-ft. test. Drlg. 125 ft.
Lee Pet. Corp. et al No. 1 J. L. Nutt, sec. 1, W. D. Henley Sur. T.D. 855 ft.; tstg. wtr. S.O.
E. R. Minshall, No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. S.D. 2,815 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. T.D. 4,-173 ft.; U.R.
Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. Drlg. 1,636 ft.
Young Oil Co. No. 1 Perry, sec. 3, Blk. Z, T.C. Sur. M.I.M.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drk.
Lindeman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R Co. Sur., 2½ mi. NE of Presidio. S.D. 3,300 ft.
A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. M.I.M.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. 770 ft.

Reeves County

Grisham & Hunter No. 1 Montgomery, 1,650 ft. from N and 330 ft. from W, sec. 1, W. B. King Sur. M.I.M.

Schleicher County

Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; fsg. swab.

Terrell County

Ohio Oil Co. No. 1 M. H. Goode, sec. 26, Blk. 161, G.C.S.F. Sur. S.D. 7,815 ft.

Terry County

W. L. Pickens et al No. 1 Lewright, sec. 1, Blk. C-37, P.S.L. Sur. S.D. 4,615 ft.
Uscan Oil Co. No. 1 Brownfield, C N¼ sec. 54, Blk. K, P.S.L. Sur. C.O. 4,910 ft.

Upton County

R. H. Henderson No. 1 Reese, sec. 16, Blk. 3½, C.C.S.D.&R.G.N.G. Sur. T.D. 3,080 ft.; P.B. 2,900 ft.; to acidize.
J. H. Myles & Son No. 1 Hughes, sec. 91, Blk. Y, G.C.&S.F. Sur. S.D. 700 ft.
Dan Short No. 1 Webb, sec. 174, Blk. E. C.C.S.D.&R.G.N.G. Sur. Fsg. 875 ft.

Ward County

Bentley & Massey No 1 Boogher. Drlg. 2,200 ft.
Findley & Cherry No. 1 Sealey, sec. 54, Blk. F, G.M.M.B.&A. Sur. T.D. 3,209 ft.; to pmp.
Moran et al No. 1 Reynolds, sec. 21, Blk. 5, H.&T.C. Sur. S.D. 850 ft.

Winkler County

Adams & Bradley No. 1 Edwards, sec. 6, Blk. C-23. Drlg. 2,835 ft.
Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. S.D. 4,508 ft.
Richardson Oils, Inc., No. 1 Humble-Walton, sec. 3, Blk. B-3, P.S.L. Sur. S.D. 2,852 ft.

WILLIAM BROWN

Natural gasoline plant foreman, Carter Oil Co., Fittstown, Okla.

Sun Oil Co. No. 1 Edwards, sec. 6, Blk. C-23, P.S.L. Sur. T.D. 3,002 ft.; rmg.
York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B.&A. Sur. T.D. 828 ft.; set csg.

Yoakum County

Texas Pacific Coal & Oil Co. No. 1 Bennett, sec. 678, John H. Gibson Sur. Drlg. 5,220 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

H. V. House et al No. 1 R. Smart "B," 5 mi. SW of Admiral, W. T. Lassiter Sur. Drlg. 790 ft.
Hal Hughes No. 2 Williams, 7 mi. NE Baird, C SE¼ SE sec. 61, B.O.A. Sur. 2,500-ft. test; drlg. 1,850 ft.
Mesa Verde Oil Co. No. 1 Klepper, 3 mi. N Clyde, sec. 69, B.B.B.&C. Sur. Drlg. 1,-100 ft.
F. R. Midkiff No. 1 Hunt, NE cor. county, sec. 107, University School Lands. Loc.
J. V. Wright No. 1 Warren, W½ SW¼ sec. 110, B.B.B.&C. Sur. Rig up.

Coleman County

Anzac Oil Corp. et al No. 1-H Morris, 12 mi. NE Coleman, J. Harris Sur. No. 77. Drlg. 150 ft.
Midfield Oil Co. No. 1 T. H. Ward, sec. 274, W. Echels Sur. S.D.O. 1,500 ft.

Comanche County

H. L. Baughman No. 1 Hardin, Isa Hoxey Sur. S.D. 800 ft.

Eastland County

F. J. Estes No. 1 Gentry, A. Popejoy Sur. S.D. 2,500 ft.

Hamilton County

Seaboard Oil Co. No. 1 fee, A. C. Grimes Sur., 10 mi. N of Huntington. S.D. 3,-635 ft. for 8-in.

Palo Pinto County

D. H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.; moving in rotary.
Paul Garrett No. 1 Mabry heirs, NE cor. county, sec. 2,572, T.E.&L. Sur. Drlg. 314 ft.
Palo Pinto O. & G. Corp. No. 1 Zimicki N edge Strawn, Henry Bird Sur. Set 6-in. 2,975 ft.; drlg. 3,015 ft.

Shackelford County

H. C. Akins et al No. 1 J. E. Swenson, C E½ sec. 14, A.B.&M. Sur. Loc.
Albany Oil Co. & Freeman No. 1 Isaacson, 4 mi. NW Morris-Buie pool, sec. 20, D.& S.E. Sur. C.O. 1,650 ft.
Butler, Calhoun & Boynton No. 1 W. H. Green, 12 mi. SW of Albany, sec. 65, T. &P. Sur., Blk. 12. S.D. 1,400 ft.
Owen-Snebold Oil Corp. No. 1 Ivey, NW cor. county, sec. 159, B.B.B.&C. Sur. Est. 2,000,000 ft. gas; sd. 1,925-27 ft.; S.D. 1,927 ft.
Roeser & Pendleton No. 1 Dawson & Conway, CWL of county, sec. 209, E.T.R.R. Sur. T.D. 1,470 ft.; U.R. 6-in.
Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Ellenburger test. S.D. for rotary.

Stephens County

C. B. Christie et al No. 1 E. S. Maury, 4 mi. W of Crystal Falls, J. Koehler Sur., Abst. 26. Drlg. 1,870 ft.
W. T. Garret et al No. 1 Echols, 6 mi SE of Ivan, W½, sec 10, Blk. 3, S.P.R R. Sur. Drlg. 2,444 ft.
Hanrahan & Bedingfield No. 1 Guest, 2 mi. NW Frankell, sec. 30, T.&P. Sur., Blk. 6. R.U.
Mudge Oil Co. No. 1 W. P. Smith, 2 mi. NW of Ivan, sec. 14, S.P.R.R. Sur., Blk. 2. S.D. 2,600 ft.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur., Pat. 3-1,197. Drlg. 1,400 ft.

Throckmorton County

R. J. Williams et al No. 1 W. B. Parrott, 4 mi. NW of Woodson, sec. 961, T.E.&L. Sur. Drlg. 2,612 ft.

Wise County

Texas-Canadian Dev. Co. No. 1 L. W. Still, NE cor. county, 330 ft. N and W lines of E½ Isham Epps Sur. Loc. for 3,500-ft. test.

Roeser on Oil Bills

Charles F. Roeser, president of the Independent Petroleum Association of America, says:

"Three bills now before congress affecting the oil industry deserve favorable action. The Connally law has been of great value to the petroleum industry and a factor in prevention of waste.

"Congressman Morgan Sanders of Texas, proposes in H.R. 88, the continuation of the present excise taxes on imported petroleum and its products. These taxes expire in June. Mr. Sanders' bill would increase the present one-half cent per gallon tax on imported crude petroleum and fuel and gas oil to 1 cent per gallon and would continue the present taxes of 2½ cents per gallon on imported motor fuel, 4 cents per gallon on imported lubricating oil and 1 cent per pound on imported paraffin and other petroleum wax products, adding a new tax of $2.00 per ton on imported asphalt. Mr. Sanders' bill also would clarify the present law in regard to exemption from excise taxes now granted supplies of vessels by making it clear that this exemption should not apply to petroleum products.

"The effectiveness of the conservation policies of the various states and the stabilization program of the industry depend upon the adoption of these measures introduced by Senator Connally and Congressman Sanders. They have the active support of practically all the domestic petroleum industry.

"The bill of Congressman John Dempsey of New Mexico authorizing appropriations for the survey to determine the quantity and character of crude petroleum in storage, would make available to the industry and to the government, necessary information upon which to base industrial and economic policies. The bill should receive the active support of the industry."

Rocky Mountain Runs

Daily average production estimates for week ending January 16 were as follows:

WYOMING

Salt Creek	15,930
Big Muddy	1,730
Badger Basin	40
Black Mountain	80
Byron	210
Dallas Derby	620
Dutton Creek	60
Elk Basin	480
Ferris	10
Frannie	900
Garland	2,590
Grass Creek	1,410
Hamilton dome	870
Hidden dome	500
Hudson	280
LaBarge	900
Lance Creek	8,410
Lost Soldier	1,010
Medicine Bow	2,660
Midway	30
Oregon Basin	2,210
Osage	650
Pilot Butte	20
Quealy dome	630
Rock River	1,220
South Casper	550
Poison Spider	220
Simpson Ridge	10
Teapot	20
Waugh Dome	120
Total Wyoming	44,380

MONTANA

Buckley Border	220
Cat Creek	660
Cut Bank	10,220
Dry Creek	40
Kevin-Sunburst	4,270
Lake Basin	40
Pondera	740
Total Montana	16,190

COLORADO

Florence	150
Fort Collins and Wellington	300
Iles dome	2,340
Moffat	410
Orchard	30
Rangely	80
Tow Creek	160
Total Colorado	3,470

NEW MEXICO

Artesia	630
Cooper	7,670
Eunice	29,870
Getty	150
Hobbs	21,900
Hogback	200
Jal	3,720
Lea	1,010
Maljamar	2,510
Monument	12,310
Rattlesnake	380
Table Mesa	40
Total New Mexico	80,390
Total Rocky Mountain Region	144,430

PERSONAL

H. W. KLEIN, after serving as general superintendent of production for the Stanolind Oil & Gas Company since 1930, has resigned effective February 1 to go into the drilling and production business with GRADY H. VAUGHN, Dallas, Tex., drilling contractor and independent operator. Two companies are being formed, to be known as the Big West Drilling Company and the Big West Petroleum Company, and Mr. Klein will be president and manager of both. Mr. Vaughn will be secretary and treasurer of both companies. Headquarters for both companies will be maintained in the Dallas Bank & Trust Building at Dallas. However, present plans also call for a branch office in Tulsa. Mr. Klein received his college training at the University of Wisconsin.

J. L. McMAHON, division manager of The Texas Company, Fort Worth, is in Pittsburgh, Pa., attending the funeral of a sister.

C. E. SEARLE, executive vice president of the Worthington Pump Company, Harrison, N. J., sailed from New York January 9 aboard the Grace Line's Santa Paula bound for Colombia, Panama, El Salvador, Guatemala, Mexico and California.

DR. PER K. FROLICH, chief chemist of the Standard Oil Development Company, now heads the newly formed chemical laboratories of that company. P. J. BYRNE, JR., is being transferred from the Aruba refinery to serve as assistant chief process engineer of the process engineering division. P. E. KUHL has been appointed assistant manager of the process department and DR. F. L. MILLER, formerly in charge of lubricants research at the Esso laboratories, becomes assistant director of that organization. The offices of all four will be in Bayway, N. J.

WILLIAM H. WILSON, formerly eastern representative for Republic Oil Company, has established an independent business in New York and will deal in the open petroleum market.

JAMES W. KISLING, district geologist for the Amerada Petroleum Corporation, Tyler, Tex., has been transferred to the Houston office of his company where he replaces LEWIS W. MacNAUGHTON, resigned. S. R. SELF has been moved to the Tyler office from Midland, Tex.

R. A. BROWN, head of Turner Valley Royalties, Ltd., and a number of other enterprises in that field, was host at a dinner for his fellow oil operators at the Hotel Palliser, Calgary, Alberta, recently. J. SCOTT RATTRAY, statistician of the Toronto Stock Exchange, was guest speaker.

J. H. MITCHELL-ROBERTS, export manager for Oliver United Filters, Inc., will leave in the latter part of January for an extended trip throughout the Far East, visiting in the Philippines, Japan, Australia and other countries. Mr. Roberts will call upon all of the company's foreign representatives in these countries and make a comprehensive study of the sales possibilities in the mining, sugar, cement, pulp and paper, petroleum, chemical and other industries.

E. N. KOTHE, of New York, manager of eastern refineries for Socony-Vacuum Oil Company, Inc., is on vacation in Florida.

J. S. ROSS, consulting petroleum engineer, Oklahoma City, Okla., recently returned from a personal business trip through California.

EARNEST DAVIS, Shreveport, La., has been elected president of the Dixie Lease & Royalty Company, Inc., at a recent meeting of the stockholders.

W. L. BLACK, formerly with the Mid-Continent Supply Company in Fort Worth, Tex., is now credit manager for the Frick-Reid Supply Company, in the same city.

HENRY J. MORGAN, paleontologist for Atlantic Refining Company in its Shreveport, La., office, has been transferred to the Southwestern headquarters of that company at Dallas, Tex.

A. C. WILLINGHAM, general manager of the Whelan Company, Chattanooga, Tenn., manufacturer of drilling machinery, was a visitor at the offices of the Lucey Products Company in Tulsa last week.

W. S. HILL, formerly in charge of the land and scouting department of the Continental Oil Company in Louisiana, has resigned that position to become office assistant for the George F. Getty, Inc., at Fort Worth, Tex.

WILLIAM A. KRAUS, of Oklahoma City, Okla., was a business visitor in Shreveport, La., recently. Mr. Kraus was formerly proration engineer for Phillips Petroleum Company at Bartlesville, Okla., recently resigning to open consulting offices in Oklahoma City.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

It is reported from Alabama that a test being drilled in West Huntsville has had five showings of oil down to its present depth of 2,400 feet. The Montgomery Advertiser says a great many people journeyed to the well and "saw the oil with their own eyes."

The proposal to lay a natural gas line from the Midway fields to Los Angeles to supply that city with fuel, is "viewed with alarm" by California oil companies who have been selling fuel oil. The line would be 200 miles long, the biggest pipe line undertaking ever conceived in California.

20 YEARS AGO

Oklahoma produces 260,000 barrels per day and Kansas 65,000 barrels per day. Cushing-Shamrock, Oklahoma, produces 85,000 barrels and Augusta-Eldorado, Kansas, 54,000 barrels.

Doctor Bransky, statistician for the Standard Oil Company, says the supply of crude oil in the United States, visible and invisible, is only 7,629,000,000 barrels and the Bureau of Mines experts think Doctor Bransky is an optimist!

The late Capt. J. T. Jones, of Buffalo, N. Y., oil producer, railroad owner and lumberman, left an estate of more than $15,000,000 to his widow and daughter.

10 YEARS AGO

A gigantic leasing play is on in northwestern Lea County and southeastern Roosevelt County, New Mexico.

Spindletop, with 80,000 barrels per day, is the largest pool in the Gulf Coast. Hull is second with 19,675 barrels.

Viscount Bearsted, founder of the Shell Transport and Trading Company, dies in London. His wife died only a few hours before.

S. L. MAURRAS, JR., has been appointed supervisor for the Gulf Refining Company in Northwest Arkansas.

GEORGE W. WOODWARD of Abilene, Tex., vice president of the Forest Development Company, was a Tulsa visitor last week.

J. A. La FORTUNE, vice president of the Warren Petroleum Corporation, Tulsa, has returned from a business trip to Louisiana.

A. C. FRAMPTON, who has been in the machinery department of the Frick-Reid Supply Corporation at Tulsa, has been promoted to traveling sales engineer.

MR. and MRS. C. J. HOCHENAUER, of Tulsa, left last week for Pueblo, Colo., where they were called by the death of Mr. Hochenauer's father, JOSEPH HOCHENAUER.

W. S. HILL, formerly in charge of land and scouting of the Louisiana district for Continental Oil Company, has become associated with the George F. Getty, Inc., in Fort Worth.

R. P. BOLTON, in charge of production for Standard Oil Company of New Jersey European interests, has been stationed at Bulevardul Tache Ionescu, 1, Bucharest, Romania. Mr. Bolton was formerly stationed at 68 Pall Mall, London, England.

IRA KNOWLES, superintendent, will be in charge of the newly opened Corpus Christi, Tex., offices of the Crown Central Petroleum Corporation. BEN BLOOM has been transferred to Corpus Christi as petroleum engineer. The company owns producing acreage in the Saxet field and found it necessary to establish this field headquarters.

PARAGRAPHS

FREEMAN W. BURFORD, president of the East Texas Refining Company, has been elected a director of the Republic National Bank & Trust Company, Dallas, Tex.

A. C. WRIGHT, Shell Petroleum Corporation, will be district geologist in the recently opened office of the company at Tyler, Tex., having been transferred there from Shreveport, La.

MARCH H. LOWRANCE, who has been in Fort Worth, Tex., for the past 10 years, first being in the Sinclair Crude Oil Purchasing Company then in the land department of the Sinclair Prairie Oil Company, has been transferred to Corpus Christi to be in charge of the land department in that district. R. L. IRBY, in the company's land department at Houston, has been made district land man at Lake Charles, La., and FRED DUMAREESE, district land man at Houston, has resigned to enter business for himself, as has W. A. YEAGER, district land man at Midland, Tex., and J. M. ARMSTRONG, district geologist there. They are also entering business for themselves, intending staying in Midland. N. B. LARSH has been made district geologist of the company at Midland, and JOHN H. KELSEY, formerly assistant district land man, has been put in charge of the district land office there. C. F. KIMBALL has been made assistant district land man.

A. I. LEVORSEN, consulting geologist, Tulsa, is at present in Florida on professional work.

L. W. BENNETT of Tulsa, treasurer of the Sunray Oil Company, is in Washington, D. C., on business.

JOHN CARTER, scout for Tide Water Oil Company at San Antonio, Tex., was a business visitor to the company's offices at Houston, Tex., the past week.

T. O. MATKINS, scout in the Ardmore, Okla., district for Sinclair Prairie Oil Company, has been transferred to the western Kansas district as land man.

GEORGE W. STRAKE, independent operator of Houston, Tex., was appointed as official envoy of GOVERNOR ALLRED at the presidential inaguration at Washington, D. C.

R. H. DURWOOD, resigned from the geological department of the Plymouth Oil Company, San Antonio and Sinton, Tex., to enter the consulting field as geologist and magnetometer operator.

CHARLES F. ROESER, president of the Independent Producers Association of America, and HAROLD B. FELL, executive vice president, will address a meeting of oil operators at Ada, Okla., Friday, January 22. The meeting was called by FRANK BUTTRAM, vice president of the association.

DR. D. P. MORGAN, chemical economist of Scudder, Stevens & Clark, has been elected chairman for the current year of the New York society of the American Chemical Society. Dr. Morgan succeeds DR. LAWRENCE W. BASS, who recently joined the staff of the Mellon Institute of Industrial Research at Pittsburgh, Pa.

NOYER B. LIVINGSTON, formerly of Fort Worth, Tex., has been transferred to Shreveport, La., as district geologist in Skelly Oil Company's newly opened offices in the Ardis Building of that city. H. LEE SPYRES, formerly of Houston, Tex., has also been transferred to Shreveport.

A. M. McCORKLE, of Fort Worth, Tex., vice president of the Stanolind Oil & Gas Company, has been made chairman of the executive committee of the Lea County, New Mexico, proration committee which was formed to take the place of the old Hobbs field proration committee. Other members of the executive committee are JAMES JOHNSTON, Fort Worth, division superintendent Continental Oil Company; JOHN R. SUMAN, Houston, Tex., vice president Humble Oil & Refining Company; JAMES DUNLADY, Hobbs, N. Mex.; M. J. COLLINS, Houston, Shell Petroleum Corporation; CHARLES WILLIAMS, the Texas Company, Fort Worth, and BEN BOWERS, Hobbs, N. Mex., Walker Oil Company.

C. M. TAYLOR, purchasing agent for Indian Territory Illuminating Oil Company, Bartlesville, Okla., was installed as president of the Purchasing Agents Association of Tulsa, January 12. He succeeds H. A. WILSON, Superior Oil Corporation, who becomes director of the national association, succeeding H. F. STOVER, Gaso Pump & Burner Manufacturing Company. Other new officers of the Tulsa association are: M. F. BRIDGES, Tide Water Associated Oil Company, first vice president; H. P. HELLINGHAUSEN, Oklahoma Pipe Line Company, second vice president, and T. C. HALLER, Sun Oil Company, secretary-treasurer. H. M. COSGROVE, executive secretary, and E. R. WELCH, assistant secretary, were reelected.

Gained Experience First

Arthur E. Pew, Jr., vice president of the Sun Oil Company, wanted practical experience before exploring the upper levels of management in a big petroleum organization. And he got it. Mr. Pew received his education at Hill School, Pottstown, Pa.; United States Naval Academy, and Massachusetts Institute of Technology. Upon leaving the last-named institution in 1920 he got a job as oil scout in the producing department of the Sun Oil Company and he worked in South Texas and the Mexia field. Late in 1922 he was transferred to the operating department of the company's Marcus Hook, Pa., refinery. Here he donned overalls and worked a shift on the stills. Later he was employed in the maintenance department.

ARTHUR E. PEW, JR.

Transfer to the engineering department came next, with better opportunities to use some of the things he had learned at school. In 1926 the young man was made chief engineer of the Marcus Hook refinery. The next year he was made a director of the company. Further advancement came in 1930, when he became vice president in charge of manufacturing, engineering and development, his present position.

Mr. Pew is active in the refining division of the American Petroleum Institute. He has been chairman of the committee on standardization of refinery equipment since 1933 besides serving on numerous technical committees and as a councillor. Mr. Pew was born in Mercer, Pa., September 26, 1899. His father was vice president of the Sun Oil Company.

VAN T. BENNETT of the A.P.I. production committee has named A. M. BLEVINS of Tulsa on the publicity committee.

L. LUNT, production engineer for the Gulf Oil Corporation, Wickett, Tex., is the proud papa of a 6-pound son born January 15 in Fort Worth, Tex.

CHARLES B. JOHNSON, JR., petroleum engineer, Barnsdall Oil Company, has been made district engineer and transferred to the Victoria district, Texas.

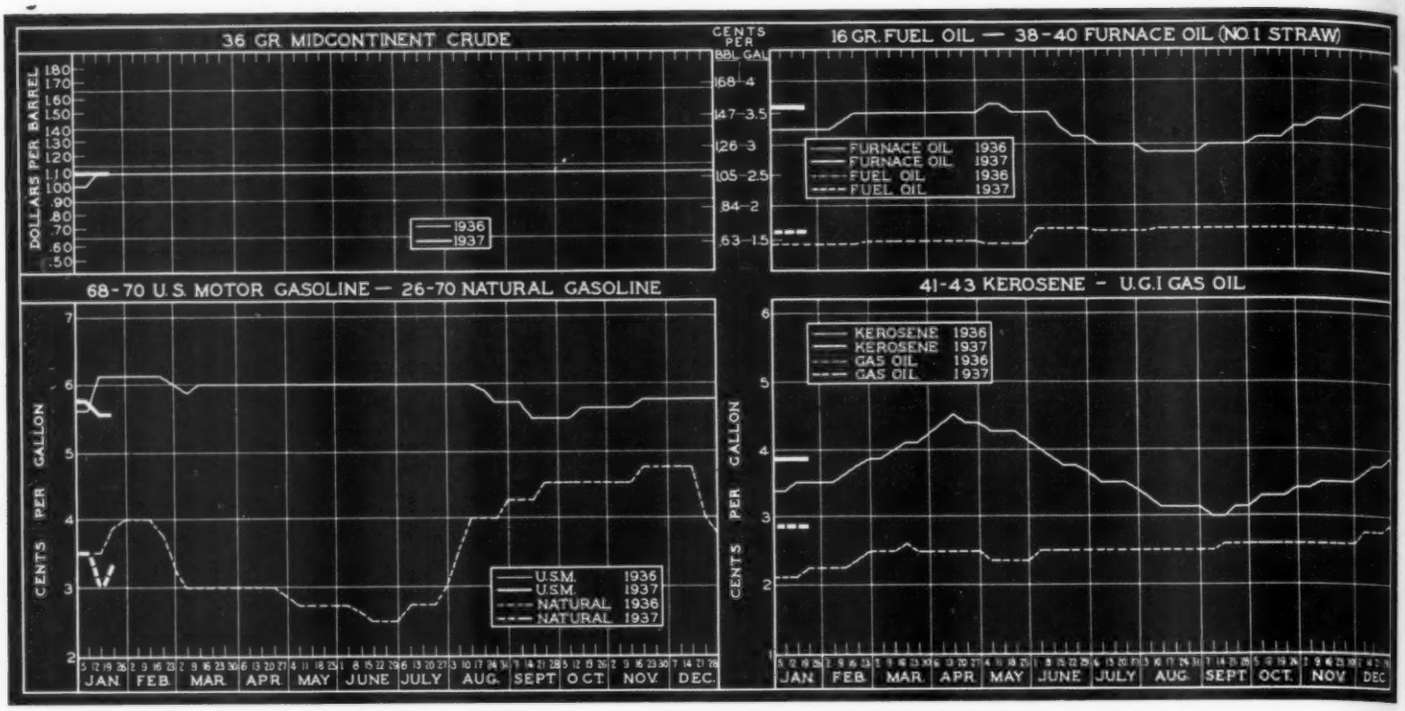
WALTER B. PYRON, executive vice president of the Gulf Oil Corporation, Houston, Tex., was reappointed chairman of the Houston Chamber of Commerce Aviation Committee.

DORSEY HAGER, consulting geologist, has opened an office in the Esperson Building, Houston, Tex., in addition to offices maintained in Winnipeg, Manitoba, Canada, and Lansing, Mich.

J. A. BARNETT has been appointed petroleum engineer for the oil and gas operating branch of the U.S.G.S. in New Mexico with headquarters at Roswell, N. Mex. Mr. Barnett was formerly with the Texas Company at Houston, Tex.

STUART MOSSOM, formerly in the geological department of the Magnolia Petroleum Company, San Antonio, Tex., has been made San Antonio district geologist for the company with headquarters in 1704 Alamo National Building.

M. E. WAGGONER, head of the Ohio Oil Company's production department in Tulsa, and J. L. COOK, assistant treasurer, were in conference last week in St. Louis, Mo., with O. D. DONNELL, of Findlay, Ohio, president of the Ohio Oil Company.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Gasoline Is Easier in Group 3 Market With Nearby Prospect Uninspiring

By T. F. SMILEY

Gasoline was easier in the Group 3 tankcar market this week, with the outlook for the next few weeks uninspiring. Natural gasoline, on the other hand, was starting upward again, with predictions that it had seen its low for the season. The burning oils were maintaining their vigor.

One thing seemed pretty clear. The slight fillip imparted to gasoline last month by the prospect of a general advance in the price of crude had lost its propulsive force. None of the major oil companies had met the 17-cent raise which three buyers put into effect January 4, and few references to it as a market factor were heard this week.

THIRD GRADE UNDER PRESSURE

The third-grade material is bearing the brunt of pressure which motor fuel is feeling. There was doubt about the stability of even the 4½ cents which refiners were asking from the trade, and some overheavy stocks were reported to have been available to buyers at concessions from that price. Although the other grades were reported to be holding their ground in point of price, their market tone was far from sturdy.

Jobbers pay less and less attention to either bullish or bearish rumors and reports which might seem to bear a close relation to market situations, keeping their attention fixed instead on positive and concrete conditions, such as the rise and decline of gasoline stocks, seasonal requirements and the weather.

Market observers point to the first week in January as the time when the present softness in gasoline was definitely manifested, and they name as the primary cause the failure of large buyers of crude to raise their prices. No substantial revival of market strength in gasoline is expected by well-informed observers until March or April, when jobbers will begin to stock up on summer motor fuel. It is recognized that in the meantime there are likely to be soft spots owing to unwieldy stocks accumulated by refiners concentrating on burning oils and without adequate storage.

Natural gasoline, which struck bottom about 10 days ago after a headlong dive, began climbing up again, and the 26-70 was 3¼ cents in Oklahoma this week and 3 cents in North Texas, a recovery of a quarter-cent. The price had dropped to such a low point that some of the large manufacturers refused to sell. When one big refiner bought some 200 cars in the last week, cleaning up most of the stocks which were looking for immediate outlets, the market stiffened appreciably and higher quotations followed. Refiners who had stayed on the sidelines, waiting to see how low the naturals would go before entering the market, have been buying in the last week. Many in the trade believe it unlikely that the low prices recorded will be witnessed again this winter.

Kerosene showed no sign of losing any of the strength it has exhibited for weeks. It was said, however, that much of the buying which has contributed to kerosene's recent energy is by refiners who have specialized on other products. Most of the kerosene which they are purchasing is not for resale to the trade, it is understood, but is sent direct to their own retail outlets.

EFFECT OF STRIKE SHUTDOWNS FELT

Though there was no real weakening of the heavy fuel oils, it was said strike shutdowns are having a measurable effect on the demand for this material. It was regarded as probable, however, that as soon as the labor troubles are settled and the various factories resume operation there will be a rise in the call for the heavy fuels.

Furnace oils continued firm, notwithstanding relatively mild weather that has prevailed over much of the Group 3 consuming area. Bright stocks and neutrals showed improvement. The recent advance in prices of the former enables refiners to get a modest profit, but there is little more than enough to pay the expense of manufacture in the neutrals at their present level. Wax was strong at prevailing quotations, with Mid-Continent stocks pretty well cleaned up. The period between May 1 and September 1 is generally a barren one for the wax division, but inventories are being kept so low as to encourage the hope that there will be no dull season for wax in 1937.

Refined Oil Market Barometer

Mounting stocks, along with the seasonal drop in consumption, are removing from the gasoline market whatever of sturdiness it has had recently. Kerosene and light distillates, except in a few areas, show no signs of the softening which normally begins to appear about the middle of January. The lubricant group is looking better.

MID-CONTINENT. Gasoline soft. Naturals up. Heavy fuels stronger. Kerosene firm.

EAST COAST. Fuel oils and lubricating stocks strong. Gasoline easier.

GULF COAST. Gasoline weak. Kerosene and burning oils extremely tight.

CALIFORNIA. General market fairly steady, with heating oils in demand.

PENNSYLVANIA. Gasoline weak. Fuel oil off. Lubricant group continues strong.

CHICAGO. Fuel oils vigorous, with increasing jobber inquiry. Gasoline quiet.

Gasoline Appears Weaker in Eastern Market But no Definite Break Seen

By H. STANLEY NORMAN

NEW YORK, Jan. 19.—Under the weight of increasing stocks and curtailed consumption in the middle west, gasoline prices were displaying a softer tone along the Atlantic seaboard last week, although no definite break in the market was evidenced.

In contrast to gasoline market tendencies, fuel oils and lubricating stocks remain strong and are constantly bouncing against the top quotations. Uncertainty in the crude market situation is contributing to indecisive trends in the general market. Suppliers are unwilling to push their products on the market feeling that a general crude advance will be followed by higher prices for all material. On the other hand, buyers are inclined to purchase on a hand-to-mouth basis feeling that kerosene and other light fuels are likely to react as the winter season is shortened unless other crude buyers soon meet the advance posted January 4 by the Continental Oil Co.

GULF COAST MARKETS FIRM

Markets on the Gulf Coast of Texas and Louisiana are holding firm. The influence of rather strong demand for kerosene and gas oil from exporters and from north Atlantic seaboard customers is bolstering conditions on the Gulf Coast. Gasoline is well held on the Gulf Coast, although movement in coastwise traffic is somewhat curtailed. Shipping and storage preference along the north Atlantic seaboard is now being given kerosene and fuel oil while gasoline stocks are restricted to working requirements. Moderate temperatures prevailing throughout the northeast up to the past weekend have curtailed the tank-wagon deliveries of fuel oil to tanks of burner customers. On the basis of past winters, marketers anticipate that freezing temperatures will grip this part of the country at almost any hour and will shoot the fuel oil consumption figures into the brackets normally expected. With approximately two months or more of potential winter weather ahead, refiners and jobbers have so far displayed no fear that over-the-season demand will fall short of last fall's forecasts.

Even though the fuel oil consumption per heating unit has been short of expectations, the greater number of burners in use this winter has maintained actual movement at levels comparable to previous winters. Fuel oil and kerosene on the Gulf Coast are limited in quantity and stocks in the northern Atlantic territory are mostly held by strong market factors who are maintaining prices at advanced levels.

PENNSYLVANIA GRADE LUBS

The outlook for Pennsylvania grade lubricating material is held particularly bright. Neutral oils are holding at advanced levels far beyond their normal period of decline. Normally the trend of neutral oil prices tends downward at or soon after January 1, but refiners are confident that present quotations will hold at least until February 1 and some think the down-swing will not set in until March 1 this year.

Bright stocks are and have been running contrary to seasonal patters for the past two months. At present, considerable inter-refinery business in bright stocks along with complimentary export demand are maintaining prices at more than normal levels. Only a few refiners are in position to supply Warren E filtered cylinder stocks and purchasers who declined to pay 13½ cents late in December or November are now buying at 15 cents per gallon. Refiners supplying the business have a feeling that the market would even stand another half or three-quarters of a cent.

KEROSENE GAINS STRENGTH

The tight condition existing in Gulf Coast kerosene markets and the limited supply held at Atlantic seaboard terminals is reflecting a strength in that product among Pennsylvania refiners not apparent two weeks ago. Turn of jobbers to western Pennsylvania for a part of their seaboard kerosene requirements, along with increased demand from parts of Indiana, Ohio and western New York has strengthened the product in that source. Until two weeks ago, kerosene was one of the weak links in the western Pennsylvania list, along with "trip-hammer" gasoline, which is a tolerated evil in that quarter. Approximately a half cent per gallon advance seems reasonably well established on 600 and 650 steam refined and 600 flash cylinder stocks with all excepting an occasional refiner asking the higher prices, ranging now from 13⅓ to 17½ cents per gallon.

FUEL OIL PRICES UP

Standard Oil Co. of New Jersey continued its general elevation of fuel oil prices last week advancing tankcar quotations on industrial fuel a quarter of a cent to 4½ cents per gallon. The company advanced practically its entire list of heating oils and diesel engine oil during the preceding week. Practically all companies are now selling fuel oils on the higher basis.

GASOLINE MARKET

For the first time in three weeks, shading of tankcar and barge gasoline prices in the New York territory was reported for the week ended Jan. 16. Tankcar gasoline business was reported at 6½ cents for 65 octane material while a quarter cent less was being offered with results for barge lots. There was evidence that a few of the marketers were growing nervous over increasing gasoline stocks, curtailed demand and failure of other large crude purchasers to support the market advance initiated by Continental Oil Co.

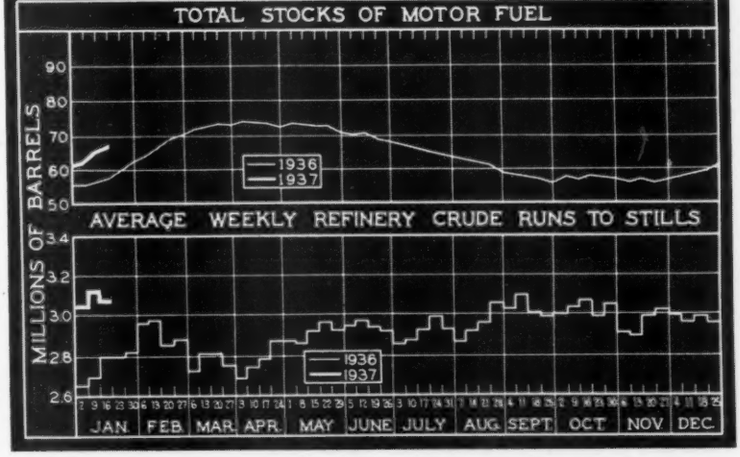
Outside of Hudson, Essex and Union counties, New Jersey, however, the retail gasoline structure is practically unchanged from levels existing for several weeks. The average service station price in New York City remains 98 cents for six gallons on house brand grade. Slightly higher prices are prevailing in suburban territory with exception of the disturbed area in New Jersey. Retail prices in New Jersey's low pressure zones have sagged to as low as 13 cents per gallon, including taxes, but the warfare is so far confined to a relatively small area. There appears to be no deep seated trouble in the New Jersey retail gasoline situation and observers of developments anticipate that it will be corrected and prices returned to normal within a few days.

A. P. I. Weekly Refinery Statistics

Week Ending January 16, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	534,000	14,327,000	8,725,000
Appalachian	94.8	99,000	2,276,000	635,000
Indiana, Illinois, Kentucky	96.2	445,000	10,494,000	5,407,000
Oklahoma, Kansas, Missouri	84.8	288,000	6,548,000	3,077,000
Inland Texas	48.5	112,000	1,876,000	1,516,000
Texas Gulf	97.1	641,000	9,675,000	6,937,000
Louisiana Gulf	96.4	131,000	1,623,000	1,738,000
North Louisiana and Arkansas	90.0	36,000	399,000	534,000
Rocky Mountains	61.9	45,000	1,203,000	730,000
California	92.6	481,000	13,332,000	73,048,000
Total reported	89.9	2,812,000	61,753,000	102,347,000
Estimated unreported	.....	233,000	4,806,000	2,494,000
*Estimated total	.....	3,045,000	66,559,000	104,841,000
*Estimated total previous week	.....	3,110,000	65,402,000	105,971,000
*January 18, 1936	.....	2,800,000	58,681,000	102,110,000

*Bureau of Mines basis, currently estimated.



STRIKE TIGHTENS CRUDE

At least a temporary interruption in developments to end the strike of workers in Venezuela oil fields, presents the general impression that the American Gulf Coast probably will be called upon by both Standard of New Jersey and Shell interests for refinery charging stock in the Dutch West Indies. Inability to maintain normal producing and shipping schedules in the Lake Maracaibo fields has reduced the refinery charging stock at Arbua and Curacao. Furthermore, the Venezuela situation has placed a greater strain on domestic crude sources available to Gulf Oil Corp. which refines production of its affiliates in this country.

Some market observers also antici-

(Continued on Next Page)

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of January 19, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.7	13.7	4.0	9.5
Decatur	15.7	14.2	4.0	9.5
Joliet	15.7	14.2	4.0	9.5
Peoria	15.7	14.2	4.0	9.5
Quincy	15.5	14.0	4.0	9.3
Davenport, Ia.	15.7	14.2	4.0	9.5
Des Moines	15.5	14.0	4.0	9.3
Mason City	15.9	14.4	4.0	9.7
Sioux City	15.7	14.2	4.0	9.5
Duluth, Minn.	16.5	15.0	4.0	10.3
Mankato	16.1	14.6	4.0	9.9
Twin Cities	16.1	14.6	4.0	9.9
La Crosse, Wis.	17.1	15.6	5.0	9.9
Green Bay	17.4	15.9	5.0	10.2
Milwaukee	17.0	15.5	5.0	9.8
Detroit, Mich.	14.5	13.0	4.0	9.2
Grand Rapids	16.2	14.7	4.0	10.3
Saginaw	16.0	14.5	4.0	10.1
Evansville, Ind.	17.2	15.7	5.0	†10.0
Indianapolis	17.4	15.9	5.0	†9.0
South Bend	17.6	16.1	5.0	†9.0
Fargo, N. Dak.	17.1	15.6	4.0	10.9
Minot	18.3	16.8	4.0	12.1
Huron, S. Dak.	17.5	16.0	5.0	10.3
Kans. City, Mo.*	15.1	13.6	4.0	8.3
St. Louis*	15.4	13.9	4.0	9.2
St. Joseph*	15.1	13.6	4.0	8.9
Wichita, Kans.	14.6	13.1	4.0	8.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N.J.	12.5	....	4.0	8.0
Newark	12.5	....	4.0	8.0
Annapolis, Md.	14.6	....	5.0	10.0
Baltimore	14.0	....	5.0	9.0
Cumberland	16.6	....	5.0	10.0
Wash'g'n, D.C.	12.0	15.6	3.0	9.0
Danville, Va.	17.2	....	6.0	12.9
Norfolk	16.0	....	6.0	11.5
Petersburg	16.3	....	6.0	11.7
Richmond	16.3	....	6.0	11.7
Roanoke	17.5	....	6.0	12.9
Charles'n, W.Va.	15.8	....	5.0	12.6
Parkersburg	15.1	....	5.0	11.2
Wheeling	15.0	....	5.0	12.2
Charlotte, N. C.	18.4	....	7.0	13.6
Hickory	18.9	....	7.0	13.0
Mt. Airy	18.7	....	7.0	12.8
Raleigh	18.0	....	7.0	12.1
Salisbury	18.5	....	7.0	12.7
Charleston, S. C.	17.0	....	7.0	11.1
Columbia	18.0	....	7.0	12.1
Spartansburg	18.7	....	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail price.

Price basis to commercial consumers, effective Nov. 2, 1936: On deliveries of 500 gallons or more by hose connection, consumer tankcar price plus .5 cent; less than 500 gallons, plus .75 cent, not taking deliveries by hose connection, plus 1 cent. Above schedule does not apply to North and South Carolina, and the greater portions of Virginia and West Virginia where the following is in effect: Up to 35,999 gallons per year, 2.5 cents over tankcar price; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,999 gallons, 1.0 cent; over 480,000 gallons, .5 cent. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero tank-wag.
Atlanta, Ga.	21.5	18.5	7.0	*14.5
Augusta	20.5	17.5	7.0	*14.0
Macon	21.0	18.0	7.0	*14.5
Savannah	19.5	16.5	7.0	*13.0
Birm'ham, Ala.	22.0	19.0	8.0	13.0
Mobile	20.0	17.0	9.0	12.0
Montgomery	23.0	20.0	9.0	14.0
Jackson, Miss.	21.0	18.0	7.0	*13.0
Vicksburg	20.5	17.5	7.0	*13.0
Jacksonville, Fla.	20.0	17.0	8.0	12.0
Miami	20.0	17.0	8.0	12.5
Pensacola	22.5	19.5	9.0	12.5
Tampa	21.0	18.0	8.0	12.0
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.0
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon. Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	17.0	....	5.0	11.0
Grand Junction	19.5	....	5.0	15.0
Pueblo	17.0	....	5.0	10.0
Casper, Wyo.	17.5	....	5.0	11.5
Cheyenne	17.5	....	5.0	13.0
Butte, Mont.	19.0	....	6.0	14.5
Billings	20.5	....	6.0	14.5
Helena	20.5	....	6.0	14.5
Great Falls	20.5	....	6.0	14.5
Salt Lake, Utah	19.0	....	5.0	16.0
Twin Falls, Ida.	21.0	....	6.0	18.0
Boise	20.5	....	6.0	18.0
Albu'que, N. M.	17.0	....	6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price 4 cents except in Montana where a discount of 2 cents off tank-wagon price is allowed; divided dealer accounts 3½ cents.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	18.1	16.6	6.0	9.8
McCook	18.8	17.3	6.0	10.5
Norfolk	18.5	17.0	6.0	10.2
North Platte	18.9	17.4	6.0	10.6
Scotts Bluff	19.6	18.1	6.0	10.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Pacific Coast Territory

STANDARD OIL CO OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	17.5	18.5	4.0	11.0
Phoenix, Ariz.	20.5	21.5	6.0	‡16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

‡Includes 5-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Post. deal.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Albany, N. Y.	13.0	....	4.0	7.75
*Met. N. Y.:				
Manhtn, Bronx	13.0	....	4.0	7.25
Staten Island	13.25	....	4.0	7.25
Q'ns & Brklyn	13.0	....	4.0	7.25
Buffalo	13.8	....	4.0	8.25
Rochester	13.8	....	4.0	8.25
Syracuse	13.8	....	4.0	8.75
Boston, Mass.	12.8	....	4.0	7.50
Portland, Me.	14.8	....	5.0	7.75
Manch'ter, N. H.	15.3	....	5.0	8.00
Burlington, Vt.	14.9	....	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag. dlr.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	14.0	17.5	5.0	9.5
Pittsburgh	15.0	18.5	5.0	10.0
Allentown	14.0	....	5.0	10.0
Erie	14.0	....	5.0	10.0
Scranton	14.0	....	5.0	10.0
Altoona	15.0	....	5.0	10.0
Dover, Del.	14.0	....	5.0	10.0
Wilmington	13.0	....	5.0	10.0
Springf'd, Mass.	13.0	....	4.0	7.0
Worcester	13.5	....	4.0	7.5
Hartford, Conn.	12.9	....	4.0	7.0
New Haven	12.8	....	4.0	7.5
Providence, R. I.	11.5	....	3.0	7.0

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, tank-wagon dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	17.5	(†)	5.0	*13.5

*Includes state tax of 1 cent.

†Following the leasing of service stations to dealers at many points the company no longer posts a statewide service station price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.5	23.0	*10.0	†13.0
Baton Rouge	17.5	21.0	8.0	12.0
Alexandria	18.0	....	8.0	12.0
Lafayette	18.5	....	8.0	12.5
Lake Charles	18.5	....	8.0	12.0
Shreveport	17.0	....	8.0	11.0
Knoxville, Tenn.	20.5	....	8.0	14.0
Memphis	18.5	....	8.0	12.0
Chattanooga	20.0	....	8.0	13.5
Nashville	19.5	....	8.0	13.0
Bristol	19.25	....	8.0	14.5

*Includes 2-cent parish tax. †Includes 1 cent parish tax and 1 cent state tax.

Price basis to commercial consumers: effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Naphtha

STANDARD OIL CO (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Ok.	15.0	....	5.0	7.0
Okla. City	15.0	....	5.0	8.0
Tulsa	15.0	....	5.0	8.0
Ft. Smith, Ark.	14.5	....	5.0	8.0
Little Rock	17.0	....	7.5	9.5
Texarkana	14.5	....	5.0	8.5

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	13.5	17.0	5.0	7.5
Fort Worth	13.5	17.0	5.0	8.5
Houston	14.0	18.0	5.0	7.5
San Antonio	14.0	18.0	5.0	7.5

Tank-wagon price is to contract dealers and commercial consumers, the price to open dealers being .5 cent above tank-wagon price.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Hamilton, Ont.	21.0	....	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	29.8	32.8	7.0	23.8
Winnipeg, Man.	28.2	31.2	7.0	20.7
Regina, Sask.	29.5	....	7.0	22.0
Saskatoon, Sask.	32.3	....	7.0	24.8
Edmonton, Alta.	30.5	33.5	7.0	24.2
Calgary, Alta.	28.0	31.0	7.0	21.5
Vancouver, B. C.	22.0	26.0	7.0	23.0
Montreal, Que.	18.5	....	6.0	17.5
St. John, N. B.	24.0	28.0	8.0	18.5
Halifax, N. S.	24.0	28.0	8.0	18.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. (Indiana) January 1 reduced dealer gasoline .1 cent in Huron.

Standard Oil Co. of New Jersey January 6 advanced tank-wagon kerosene .2 cent in Norfolk.

Standard Oil Co. of Louisiana January 11 advanced tank-wagon kerosene 2 cents in Chattanooga, 3 cents in Nashville, 2.5 cents in Memphis, 2 cents in New Orleans, .5 cent in Baton Rouge, 2.5 cents in Alexandria, 2 cents in Lake Charles and 1 cent in Shreveport.

Eastern Market

(Continued from Preceeding Page)

pate that the Venezuela situation may have a bearing on the domestic crude price situation, if it continues unchanged for an appreciably longer period. There is the additional uncertainty of continued normal supply from Mexico, although last week's interruption of production was only a temporary measure in protest of an administration ruling by President Cardenas, which the labor syndicate protested by stopping all work for 24 hours.

However, in view of the uncertainties over normal supplies of crude from Mexican and Venezuelan fields, there is little doubt that companies dependent on those sources for a part of their refinery supplies will doubtless fortify their positions elsewhere to whatever extent possible.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of January 19, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below (3d gr.)	.04½	.04⅝
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅛	.05⅞
60-62 400 grades:		
62 octane and below (3d gr.)	.04½	.04⅝
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅛	.05⅞
64-66 375	.05	.05⅛
68-70 360	.05⅛	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅛	.05⅞
60-62 400		.04⅝
64-66 375	.04⅞	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05½	.05⅝
63-67 octane	.06⅛	.06½
68-70 octane (regular)	.06½	.06⅝

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.05½	.05⅝
63-67 octane	.06⅛	.06½
68-70 octane (regular)	.06½	.06⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04½	.04⅜
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅝	.05⅞
60-62 400 grades:		
62 octane and below	.04½	.04⅜
63-67 octane	.05	.05⅛
68-70 octane (regular)	.05⅝	.05⅞
64-66 375	.04⅞	.05⅛
68-70 360	.05⅛	.05⅛

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05¼
60-64.9 octane		.06¾
65-70 octane		.07
64-66 375		.05½
68-70 350		.05¾

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08
58-60 400, 65 octane and higher	.07½	.08½

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¼
Baltimore		.06¼
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.06½
Philadelphia	.06½	.06¾
Boston		.06¾
Baltimore	.06½	.06¾
Charleston, S. C.		.06¾
U. S. Motor, 65 and above:		
*New York (Bayonne)		.06¾
Philadelphia	.06¾	.07
Boston		.07
Baltimore	.06¾	.07
Charleston, S. C.		.07

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¼	.05⅜
60-64.9	.05⅜	.05⅝
65 octane and higher	.05⅞	.06

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05⅛
52-54 450 (blending)	.05⅛
54-56 450 (blending)	.05¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¼
Grade 18-55	.03⅜	.04
Low vapor pressure grade:		
*14-pound v.p. (max.)		.04⅛
*12-pound v.p. (max.)	.04⅜	.05

*Nominal.

NORTH TEXAS—

Grade 26-70		.03
Grade 18-55		.03⅝

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.03⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04	.04⅛
40-48 gr., 210-230 i.b.p., 480 max. e.p.		.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04	.04⅛

NORTH TEXAS—

41-43	.03⅞	.04

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅛

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅞	.05

PENNSYLVANIA (inland refineries)—

45	.05⅛	.05⅛
46	.05⅛	.05⅝
47	.05⅝	.05½

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04
42-44	.04	.04⅛

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.03¾	.05

NEW YORK (Bayonne, N. J.)—

41-43		.05¾

*GULF COAST (domestic)—

41-43		.05½

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅝	.03⅞
No. 2 dark, 32-36	.03½	.03⅝
No. 3, zero to 15, 28-32	.03⅝	.03½
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42		.03¾
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅝	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36		.03¾
No. 3, 28-32		.03½

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03¾
No 2 dark, 32-36	.03⅜	.03⅝
No. 3, zero to 15, 28-32	.03⅜	.03⅝
No. 3, 15 and above, 28-32	.02⅝	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.05
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.05
No. 4, 15 and above, 24-28	.80	.85
No. 5, low cold test, 18-22	.77½	.80
Below 18 fuel oil, industrial	.70	.75

NORTH TEXAS—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	.95	1.05
No. 5, low cold test, 18-22	.75	.80
Below 18 fuel oil, industrial	.65	.75

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅝	.02¾
10-14 fuel oil, industrial	.70	.75

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.60	.65

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.00	1.02½
No. 4, 15 and aove, 24-28	.80	.85
No. 5, low cold test, 18-22	.77½	.80
No. 6, low cold test, 10-16	.67½	.70

PENNSYLVANIA (inland refineries)—

36-40	.04¾	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	.95	1.15
24 plus diesel	1.00	1.25
24 plus diesel (bunkers)	1.05	1.30
12-16 (bunkers at tidewater)	.85	.95
10-16 (cargo lots)	.75	.95
12-17 (tankcars)	.70	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.75
San Francisco:		
27 plus diesel		1.35
24 plus diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03½	.03⅝
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		.95

NEW YORK (Bayonne, N. J.)—

27 plus. gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)		.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)		1.15
Industrial fuel (tankcars)		.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.20½
150-160 D, 0-10		.17½
150-160 D, 15-25		.17
150-160 E, 15-25		.16½
100-110 D, 0-10		.16
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):

10 pour test	.24½	.25
15 pour test	.23½	.24
20 pour test	.22½	.23
25 pour test	.21½	.22
Steam refined:		
600	.14	.14½
650	.15½	.16
600 Pennsylvania flash	.16½	.17
630 flash	.17½	.18
600 Warren E filtered	.17	.17½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.08½
180-3	.09½
180-4	.09
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½
300-3½	.12½
400-3½	.13½
100-2½ paraffin oil	.05¾
15-20 Cold Test:	
200-3	.09½
200-4	.09
250-3	.10½
250-4	.10
280-3	.11½
280-4	.11

GULF COAST—

Pale Oils:		
200-3	.06½	.07
300-3	.07	.07½
500-3½	.08	.08½
750-3½	.08½	.09
1,200-3½	.09¼	.09½
2,000-4	.09½	.10
Red Oils:		
200-5-6	.06¾	.07
300-5-6	.07	.07½
500-5-6	.08	.08½
750	.08½	.09
1,200-5-6	.09	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
300-2½-3	.07	.08
400-3-4	.09	.11
450-3-4	.09	.11
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10½	.11½
400-5-6	.10½	.11½
450-5-6	.10½	.11½
500-5-6	.10½	.11½
600-5-6½	.10½	.11½
700-6½ plus	.10½	.11½
750-6½ plus	.10½	.11½
900-6½ plus	.10½	.11½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.22	.22½
10 pour test	.21	.21½
15 pour test	.20½	.21
25 pour test	.19½	.20
180 vis. at 70° F., 3 color:		
25 pour test	.22	.22½
200 vis. at 70° F., 3 color:		
Zero pour test	.25½	.26
10 pour test	.24½	.25
15 pour test	.24	.24½
25 pour test	.23	.23½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅝	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0255	.0260
124-126 (a.m.p.) w.c. scale	.0260	.0265

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0240	.0250
124-126 (a.m.p.) y.s.	.0240	.0245
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05⅞

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¼
60-62 400		.05⅜
61-63 390	.05⅜	.05½
64-66 375		.05⅝

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white	.04¾
41-43 water white	.04½
44 water white	.05

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbls.)—

Cylinder Stocks:	
600 Warren E	.23
600 S.R. unfiltered	.20½
650 S.R. unfiltered	.22
600 flash S.R.	.23
630 flash S.R.	.24½
Bright Stocks:	
8 color	.29½
6½ plus color in dilution	.28

NEUTRAL OIL

200-3 color	.28½
150-3 color	.25½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.	.04125
125-127 a.m.p.	.0425
128-130 a.m.p.	.0450
133-135 a.m.p.	.0525
135-137 a.m.p.	.0550
Crude scale:	
124-126 w.s.	.0260 .0270
124-126 y.s.	.0245 .0250

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Talco (Nov. 1, 1936)	.65
Altus and Tipton, Okla.‡	1.08
Other fields (see gravity table).	

*All companies. †Pure Oil Co. ‡Gulf Oil Corp. Talco by Humble Oil & Refining Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1.10
Hardin, Tex.	1.03
Greta, Tex. (Nov. 1, 1936)	.95
Refugio, Tex., heavy (Nov. 1, 1936).	.95
Tomball, Tex.	1.30
Lafitte, La.	1.12
Livingston, Tex.	1.15
Bosco, La. (Jan. 16, 1936)	1.05
Evangeline, La.	1.07
O'Connor (Nov. 1, 1936)	.95
McFaddin (Nov. 1, 1936)	.95
Satsuma (Nov. 1, 1936)	1.15
Heyser, light (Nov. 1, 1936)	1.15
Heyser, heavy (Nov. 1, 1936)	.90
Placedo (Nov. 1, 1936)	.90
Plymouth (Nov. 1, 1936)	
...See gravity table for Gulf Coast pools	
Welsh, La.	.96
Tepatate (La.) (Jan. 4, 1937)	1.12

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.28
Torchlight, Wyo.*	1.28
Grass Creek, Wyo., light*†	1.18
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	.67
Elk Basin, Wyo., light *†	1.18
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (Nov. 4, 1936)	.70
Hogback, N. Mex.*	1.21
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Big Muddy, Wyo. (Jan. 4, 1937)‡	1.23
Rock Creek, Wyo. (Nov. 1, 1936)†	1.08¼
Artesia, N. Mex. (Jan. 4, 1937)‡	.97
Maljamar, N. Mex. (Jan. 9, 1936)‡	.80
Fort Collins and Wellington, Colo. (Jan. 9, 1936)‡	See Note
Florence, Colo.	.98
Lance Creek, Wyo.	.85
Lance Creek, Wyo. (Jan. 4, 1937)‡	1.02
Lost Soldier, Wyo. (Sept. 30, 1933)	.88
Hudson, Wyo. (June 2, 1931)	.65
Sunburst, Mont. (June 5, 1936)	1.15
Cat Creek, Mont. (Jan. 4, 1937)‡	1.45
Cut Bank, Mont.	1.35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.

Lima (Sept. 22, 1936)	$1.15
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)*	1.23
Midland, Mich. (Sept. 16, 1936)*	1.32
Midland, Mich. (Sept. 28, 1936)†	1.37
West Branch, Mich. (Sept. 16, 1936)	1.16
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.33
Western Kentucky (Nov. 1, 1936)	1.19

*Posted by Simrall Corp. and Pure Oil Co. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. †Old Dutch Refining Co.

Southwest Texas

(January 9, 1936)

Saxet (Nov. 1, 1936)	.95
Mirando (Nov. 1, 1936)	.90
Pettus	1.35
Taft (Nov. 1, 1936)	.85
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	.90
Lytton Springs	1.00
Duval County	.85
Flour Bluff (Nov. 1, 1936). See gravity table	

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duval by Texas Co.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$.75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East field (Jan. 16, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	.80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana, El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita counties, Arkansas.

Eastern States

TIDE WATER PIPE LINE CO.
(Effective Dec. 28, 1936)

Bradford, Pa.	$2.57
Allegany, N. Y.	2.57

SOUTH PENN OIL CO.
(Effective Dec. 28, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.57
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.33
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.27
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2.13
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1.81

PENNZOIL CO.
(Effective Dec. 28, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.57
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.54
Includes Tidioute district.	
Group C	2.53
Includes Turkey and Tidioute districts.	
Group D	2.54
Includes Bear Creek and Porkey districts.	
Group E	2.51
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	
Price depends on lengths of pipe line haul to plant at Oil City.	

PURE OIL CO.
(Effective Dec. 28, 1936)

Cabin Creek, W. Va.	2.27
Bradford Hollow, W. Va.	2.27
Kelly Creek, W. Va.	2.27

Canada

Ontario (Sept. 9, 1933):*	
Petrolia	$2.10
Oil Springs	2.17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2.60
Discolored naphtha, 65 gravity and and higher	2.56
Discolored naphtha and crude oil, 40-40.9 gravity	1.56
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2.37

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$0.96

*F.o.b. ship, based on November transactions and exclusive of production and export taxes and bar dues.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Flour Bluff, Turtle Bay Anahuac Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$.92	....	$.82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$.86	....	....	$.78	....	....	....	....	....	....	....
25-25.9	.88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1.08	....	.98
28-28.9	.94	....	....	.86	....	....	....	....	1.10	....	1.00
Below 29	.94	$.84	$.91	....	....	....	....	$.75	....	....	....
29-29.9	.96	.86	.92	.88	....	....	....	.76	1.12	....	1.02
30-30.9	.98	.88	.95	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1.00	.90	.97	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.99	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1.20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1.22	1.12	1.12
Below 35	....	....	....	....	$.86	$.81	....	....	....	....	....
35-35.9	1.08	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1.14	1.12
36-36.9	1.10	1.00	1.07	1.02	.90	.85	1.26	.90	1.22	1.16	1.12
37-37.9	1.12	1.02	1.09	1.04	.92	.87	1.28	.90	1.22	1.18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1.16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1.22	1.12
40 and over	1.18	1.08	1.15	1.10	.98	.93	1.34	.90	1.22	1.24	1.12

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Oreouts*
14-14.9	$.80	$.79	$.74	$.74	$.76	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.70	$.70	$.70	....	....	$.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.73
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.74	.74	.71	$.70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$.78	.78	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.83	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	....	.96	.88	.93	.82	.93	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.98	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.89
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.33	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.34 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1936-37 High	1936-37 Low	Week ended Jan. 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1935 High	1935 Low	1934 High	1934 Low
125	75	2,400	108¾	105	105	Amerada Corp.	788,675	N.P.	50cQ	1-30-37	$2.00	80	48½	55⅝	39
35⅛	26⅝	22,700	32¾	31¾	32¼	Atlantic Refining	2,664,904	$25	50cQ¶	12-15-36	1.25	28	20½	35¼	21½
40⅜	21	19,200	39¾	37⅞	38¾	Barber Co.	387,149	$10	50c	12-10-36	.50	22½	11¾	23½	12
33½	14⅛	112,700	33½	30⅝	32	Barnsdall Oil Co.	2,131,090	$5	25cQ	2-1-37	.80	14¾	5⅞	10	5⅞
23⅜	16	229,200	20⅞	18⅞	19⅞	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.40	15¾	3⅜	19¼	6⅝
17¼	11½	98,900	17	16¼	16½	Consolidated Oil Corp.	13,983,287	N.P.	20cQ	2-15-37	.80	12¼	6½	14¼	7¼
45¼	28⅛	20,100	44⅞	43¼	44¼	Continental Oil of Delaware	4,682,671	$5	25c Spl.	12-15-36	1.50	35	15⅛	22¾	15¾
15⅞	6⅝	190,000	16¾	15⅝	16¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	7	1½	5⅝	2½
31⅝	17¼	10,800	31⅝	30⅝	30⅞	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	1.15	20½	9½	14¾	9⅛
29⅞	16¾	2,700	28½	26⅞	27⅛	Mission Corporation	1,399,345	N.P.	....	.....	.45	17¾	10⅜	..	..
75½	19⅞	5,000	67¼	62⅞	63	National Supply of Delaware	382,591	$25	....	5-15-31	....	20⅞	9	21⅛	10
19½	12⅛	101,800	19½	18⅛	18⅝	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.60	14¼	9¼	15⅞	8½
26⅜	11¾	3,100	25⅝	24	24	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	14	6¾	9⅜	5½
4¼	1⅜	5,300	3½	2¾	3⅜	Panhandle P. & R.	198,770	N.P.	....	.....	....	1⅞	½	2½	⅝
52½	38⅛	24,000	52⅛	50⅛	51⅝	Phillips Petroleum	4,152,836	N.P.	$1Q¶	12-1-36	2.50	40	13¾	20¾	13⅜
27¾	11⅞	13,500	26	25	25⅛	Plymouth Oil Co.	1,050,000	$5	40c	12-22-36	.90	13	6½	16¾	7¼
24⅞	16	74,300	22¼	20⅝	21	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	17	5⅞	14⅞	6⅛
44	30½	18,900	43¾	41	43⅝	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	12-15-36	1.00	36⅞	20¾	33⅜	20¾
29¾	14¾	13,500	29¼	28⅛	28⅝	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	.25	16½	5½	11½	6
127½	102	6,700	103	102½	103	Shell Union Oil 5½% pfd.	400,000	$100	26⅛c	12-15-36	28.87½	111	63⅛	89	57
6¾	3½	3,400	4	3¾	4	Simms Petroleum	461,698	$10	50c liq.	1-9-37	2.25 liq.	18¾	4¾	17⅛	7¼
47⅜	19½	6,000	45¾	43½	45¼	Skelly Oil	1,008,514	$15	....	12-15-30	....	20½	6½	11½	6
17½	12½	89,400	17	16¼	16¾	Socony-Vacuum	31,151,075	$15	25cSpl.	12-15-36	.70	15¾	10⅝	19⅛	12½
47⅝	35	44,900	46¼	43⅛	46	Standard Oil of California	13,014,754	N.P.	30cQ¶	12-15-36	1.20	41⅛	27¾	42⅞	26½
48½	32¾	18,700	48⅛	46⅝	47¾	Standard Oil (Indiana)	15,215,677	$25	$1.25Q¶	12-15-36	2.40	33⅜	23	32¾	23¼
31	25	400	31½	31	31½	Standard Oil of Kansas	200,000	$10	$1	12-26-36	1.00	32	20	41	26
70⅝	51⅛	47,900	69⅝	68⅜	69	Standard Oil of New Jersey	25,856,081	$25	$1.25SA¶	12-15-36	2.00	52⅜	35¾	50⅛	39¼
91	70	1,900	77½	75	76	Sun Oil	1,733,013	N.P.	25cQ**	12-15-36	$1 & 6% Stk.	77	60½	74¼	51½
55⅜	28⅞	49,600	55⅜	52	52	Texas Corp.	9,340,069	$25	25cQ	1-1-37	1.50	30¼	16½	29⅜	19⅝
8⅞	4⅜	33,500	8⅜	7⅞	8	Texas Gulf Producing Co.	888,102	N.P.	5c	12-15-36	.05	4¾	2½	7	3⅜
16⅛	7½	88,500	16⅛	15⅝	15⅜	Texas Pacific Coal & Oil	880,703	$10	25c	8-1-36	.25	9¼	3¼	6½	2½
21¾	14¾	17,100	21⅜	20½	21	Tide Water Associated	5,642,342	N.P.	15cQ	12-1-36	.70	15⅞	7⅝	14⅜	8
108	100⅝	6,300	108	106¼	107⅛	Tide Water Associated pfd.	626,221	$100	$1.50Q	1-2-37	6.00	104½	84	87	64½
28½	20¾	8,000	26	25½	25¾	Union Oil of California	4,386,070	$25	25cQ	11-10-36	1.00	24	14¾	20½	11½
31⅝	22⅝	4,400	29⅜	28½	28½	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-36	1.20	26½	20⅞	25¾	15⅝
5¼	2¾	7,200	5⅛	4¾	5	Wilcox Oil & Gas	424.839	$5	....	5-10-28	....	3⅛	1	5¾	2

*Ex-dividend. †Plus extras ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Includes extras. **Plus 6% stock.

New York Curb Exchange

1936-37 High	1936-37 Low	Week ended Jan. 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1935 High	1935 Low	1934 High	1934 Low
21	13¼	10,100	19⅞	18⅝	19⅝	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	$1.00	14⅛	3¾	3¾	½
50	39¾	400	48	47½	48	Buckeye Pipe Line Co.	200,000	$50	$1Q	12-15-36	3.25	42½	30½	38	26
4⅞	1⅞	16,900	2⅜	2¼	2⅜	Carib Syndicate	799,020	25c	....	.....	....	4¼	1⅝	5½	1½
124¾	105	200	115	114	114	Chesebrough Mfg. Co.	120,000	$25	$2.50Q†	12-21-36	7.00	157	115	150	116
7⅝	3	342,800	5⅜	4⅜	5⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	3¼	¾	4¼	1¼
4⅝	1½	24,200	4⅛	3½	3½	Cosden Oil	399,687	$1	....	.....	....	1½	¼	3⅞	½
39	19⅞	9,800	36¼	34⅛	34½	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.50	23¾	10	14⅜	9⅝
18⅛	9	2,600	16⅞	16	16½	Darby Petroleum	351,390	$5	25cSA	1-15-37	.50	8⅞	4	7½	4⅛
7⅞	1⅞	17,600	7⅞	6⅛	7	Derby Oil & Refining	263,162	N.P.	....	.....	....	2	¾	2¼	1
47	38½	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	11-2-36	4.00	38	33¼	37	30
62⅞	54	15,000	62¼	60	61¼	Gulf Oil Corp.	9,076,202	$25	75c†	12-10-36	1.50, 100% Stk.	74¾	50¼	76¾	49¾
82⅜	57	8,600	82⅜	79	82¼	Humble Oil & Refining	8,923,935	N.P.	50c†	12-26-36	1.50	64	44	49½	33¼
24½	19¾	9,800	21⅞	21⅜	21⅝	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	22½	15⅜	17⅞	12⅝
9¾	5½	1,600	8⅜	8	8¼	Indiana Pipe Line	300,000	$10	20c Spl.	12-17-36	.80	6⅛	3⅝	6⅞	3⅝
39⅝	32⅝	8,900	35⅞	35¼	35½	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39¾	28	33⅜	19⅜
15⅜	9⅞	20,100	14⅛	13¾	14	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-36	.50	11⅜	4⅜	5	2⅛
19½	7⅜	18,400	19½	17⅛	19⅜	Lion Oil Refining	270,000	N.P.	25cQ	12-26-36	.75	8⅛	3½	6	3⅝
14¼	9⅞	17,600	14¼	12¾	14⅛	Lone Star Gas	5,382,723	N.P.	20c	12-24-36	.60	10⅞	4½	8⅜	4¼
8⅜	5	5,800	6⅜	6	6¼	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.60	5¾	4⅛	5½	4
23	17⅜	3,300	19¼	18	18⅞	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-37	1.00	20	11¾	18⅛	13⅛
15¾	9¼	3,600	11⅞	10	11⅛	National Transit	500,000	$12.50	35cSA	12-15-36	.75	10⅝	6¾	9½	7
5¼	2⅞	900	5¼	4⅞	4⅞	New Bradford Oil	1,445,202	$5	10cSA	5-15-36	.10	3¼	2	2½	1¾
6⅝	1⅝	2,000	4⅜	4⅛	4⅛	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	2½	1	2¾	1
15¾	9¼	300	5¼	5⅛	5⅛	New York Transit	100,000	$5	15cSA	10-15-36	.35	4⅞	3	4¾	3
9¾	4¼	100	8	8	8	Northern Pipe Line	120,000	$10	35c	1-2-37	.40	8	5¼	7	4⅝
10⅛	3¼	73,700	9	8⅛	8¼	Pantepec Oil	1,608,700	N.P.	....	.....	....	4⅜	1¼	2⅝	⅞
19¼	4½	1,800	13¾	13	13⅛	Root Petroleum Co.	336,045	$1	25c	11-2-36	.50	5	1½	..	..
5¾	1⅞	18,700	5¾	4⅞	5¾	Ryan Consolidated	296.931	N.P.	....	.....	....	2½	⅝	3⅜	⅞
47	32½	900	47	45½	47	South Penn Oil	1,200,000	$25	90c†	12-29-36	2.60	34½	21⅝	26½	17½
7⅞	3¼	500	6⅝	6	6	Southern Pipe Line	100,006	$10	10cSA	9-1-36	.25	5	3⅞	5½	3½
60	42	No sales	..	..	..	South West Penna. Pipe Lines	35,000	$50	$1Q	10-1-36	13.00	56	44¼	47	41
23⅜	17⅛	3,300	20⅜	19¾	20⅜	Standard Oil of Kentucky	2,604.790	$10	50cQ†	12-15-36	1.35	24	18	18⅜	14⅝
14⅝	11	100	12	12	12	Standard Oil of Nebraska	188.403	$25	25c	12-19-36	.25	12	7¾	16⅞	8¼
40	21¾	2.900	37¼	36¼	36¼	Standard Oil of Ohio	753.740	$25	$1.50†	12-21-36	2.00	23⅝	11½	28½	12¼
5	2⅝	23.800	4½	4¼	4⅜	Sunray Oil	1,910,748	$1	5c	12-21-36	.10	2⅞	⅞	2	‡‡
9¾	5⅜	6,000	7⅜	6¾	7⅛	Texon Oil & Land	336.028	$2	15cQ	12-28-36	.60	6⅞	5	11	4⅜

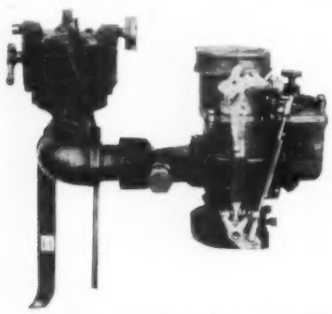
*Ex-dividend. †Includes extras. ‡Payable in Canadian funds. §New stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

Power Units May Be Operated on Natural Gas or Gasoline

The "Ensign" natural gas adapter assembly, permitting the operation of Ford V-8 power units on either natural gas or gasoline, is a recent addition to the line of the Ensign Carburetor Co., 7010 South Alameda Street, Huntington Park, Calif.



As shown in the picture, an adapter for natural gas is added to the standard Ford V-8 gasoline carburetor. The fuel regulator unit performs the same general function with gas as does the float-bowl of a gasoline carburetor with gasoline. It reduces the pressure of the gas to slightly below atmospheric pressure. With this accurate control, proper metering of gas at the carburetor is achieved. When engine demand has ceased the flow of gas is shut off automatically.

An interesting feature is the protection against vibration provided for the float mechanism, needle, and seat when operating on natural gas, as at such a time the float-bowl of the gasoline carburetor is, of course, dry. There is a combination float-lock and gasoline shutoff, a knurled knob shutting off the gasoline and holding the mechanism in a fixed position.

This adapter is placed between the die-cast upper part and the cast-iron throttle-tube. A support takes the strain off the gasoline carburetor and eliminates vibration of the fuel regulator.

Bulletins, Booklets and Other Literature for the Trade

Articles of special interest to oil men in the January Water Tower, issued bimonthly by the Chicago Bridge & Iron Co., Chicago, discuss distribution of Standard Oil products in Alaska through a central bulk plant and data showing value of pressure storage for motor fuel.

Oil men with corrosion problems will find of interest the current issue of Nickel Cast Iron News, published by the International Nickel Co., 67 Wall Street, New York.

The January number of Friendly Chat, published "for your enjoyment" by Baker Oil Tools, should help anybody to look on the bridght side and incidentally should stir interest in Baker cement equipment.

The Texas Steel Co., Fort Worth, Tex., has ready for distribution a 16-page brochure, describing its line of Texasteel pumping equipment, including sucker-rods, jacks, backside assemblies, rodline swings, holdups, holddowns, holdovers and safety knockouts.

"Lessons in Arc Welding," published by the Lincoln Electric Co., Cleveland, Ohio, to provide a thorough working knowledge of practical arc welding, has been reissued in enlarged form, and contains 44 lessons and approximately 130 pages. The price is 50 cents in the United States.

The Hercules Tool Co., Tulsa, has ready for distribution its illustrated loose-leaf catalog No. 36, covering its line of products for drilling and production.

Bulletin 1136, ready for distribution by the Young Radiator Co., Racine, Wis., describes a new line of engine-jacket water coolers.

A complete catalog covering the entire line of Oster-Williams pipe- and bolt-threading equipment and welding equipment is announced by the Oster Manufacturing Co., 2057 East Sixty-first Place, Cleveland, Ohio.

Characteristics and applications of power pumps are discussed in detail in Bulletin 6,160, offered by Fairbanks, Morse & Co., 900 South Wabash Avenue, Chicago. The design and operating principles of Fairbanks-Morse duplex power pumps, with self-oiling power end and valve deck type fluid end, are described.

Eastman Oil Well Survey Co., Box 1210, Dallas, Tex., has published a three-color, eight-page booklet, covering the Eastman oriented core-barrel, which aids geologists in determining the dip and strike of subsurface formations. The method and tool are described and illustrated along with the Eastman service arrangement.

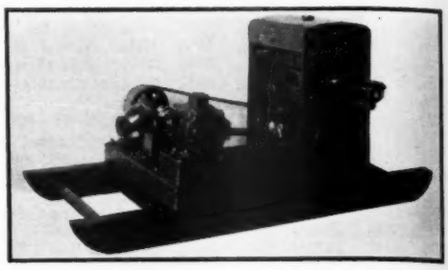
The Patterson-Ballagh Corp., Los Angeles, Calif., is offering two bulletins, one on the company's wire-line spooler and one on its safety mud-gun.

Besides matter of general interest the January issue of the Wheatley Pumper, published by Wheatley Bros. Pump and Valve Manufacturers, Tulsa, contains an article telling how the Wheatley check- and gate-valve is made to withstand rough oil-field usage.

Four new bulletins are announced by the Bridgeport Machine Co., Wichita, Kans.: No. 37 a condensed catalog of the company's principal products; No. 50, a treatise on rotary drill-collars; No. 60, Bridgeport mechanical drilling rigs, with charts showing horsepower required for operation of various slushpumps, fuel-consumption charts and other information; No. 80, Bridgeport cable-tool drilling unit.

High-Pressure Pickup Pump Is Run by Air-Cooled Engine

A high-pressure pickup pump for pipeline service put on the market by the Harley Sales Co., Tulsa, is powered with a four-cylinder Wisconsin air-cooled engine, thus having the advantages of low weight and elimination of the hazards of freezing or burning up. Radiator, water-pump and fan are absent. The heavy counterbalanced crankshaft runs in Timken tapered bearings, and the entire engine is a rugged power plant designed to stand up in the toughest of service. Each engine is factory-tested at 140° F. operating temperatures.



The 2-inch rotary pump has a capacity of about 56 gallons per minute at 300 pounds discharge pressure. The rotors are made of herringbone gears, which operate on full ball bearings carried in cork-sealed stuffing-boxes. The drive pulley is on shaft between two outboard bearings, connected by means of a flexible coupling to the pump. Power is transmitted by five B section V belts.

Wilson Electrode No. 520

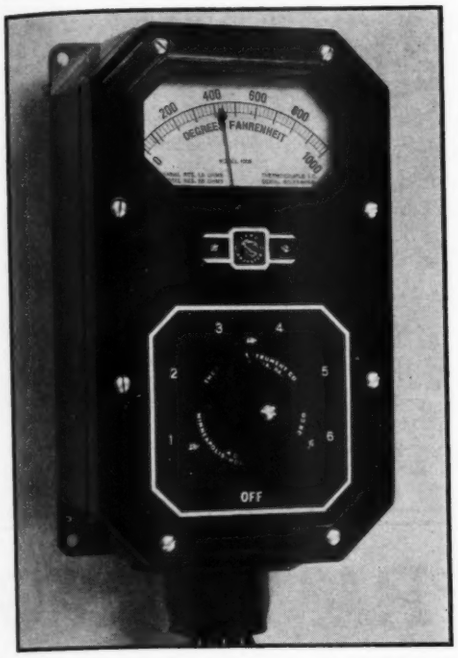
A new electrode announced by the Wilson Welder & Metals Co., 60 East Forty-second Street, New York, known as the Wilson No. 520, is designed for use with the small transformer type A.C. arc welders. Striking and maintaining an arc without difficulty is said to be an actual accomplishment with the new No. 520. Easy to handle, it works equally well with A.C. or D.C. machines. Good-looking bead deposits are the result, and slag interference is reduced to a minimum, with removal simplified. The rod has been carefully tested by Wilson engineers, and the results which they obtained are said to have been confirmed by actual use in the field.

MISSION SALESMEN STUDY COMPANY'S PRODUCTS

Mission Manufacturing Co. salesmen from the Mid-Continent and California areas attending the semiannual three-day sales meeting at the company's main plant in Houston, Tex., made a trip through the plant to study the company's modern shop practices and products. A banquet followed.

Diesel Pyrometer Available in Three Temperature Ranges

A new pyrometer, designed especially for diesel engine service has been announced by the Brown Instrument Co., Philadelphia, Pa. It is available in three temperature ranges, 0-1,000° F., 0-1,200° F. and 0-1,600° F. and with the following combina-



tions of switch-points: 4, 6, 8, 12, 16 or 24. The 0-1,000° F. instrument is also available with "cold," "normal" and "danger" operating zones plainly indicated on the scale. Great vibration-resisting qualities have been built into the Brown diesel engine pyrometer by designing it for extreme durability and light weight.

The measuring system, highly sensitive in all standard ranges, is rugged and is said to be capable of close accuracy under the severest service. It is provided with a special neutralizer having a negative temperature coefficient, thus permitting the use of heavy springs in the system while still maintaining a low overall temperature coefficient.

The case is of leight-weight molded bakelite to assure a permanent finish and is thoroughly waterproof. A dial-type switch, integral with the pyrometer, is mounted in a separate compartment of the case, enabling an operator to select temperature indications with convenience from any number of thermocouples in combinations mentioned above. Switch-points are made extra large to withstand hard usage. Elimination of a terminal board from the case has added to ruggedness and compactness.

Here and There With Men Who Manufacture Equipment

H. N. McClatchey, who represented Byron Jackson Co. in the Seminole, Okla., area, has joined Lucey Products Corp. Seminole will continue to be his headquarters.

Harvey L. Miller, assistant manager of tubular products sales for the Jones & Laughlin Steel Corp., will be located in Dallas, Tex., giving special attention to service on J. & L. oil-country tubular products in the Mid-Continent, Southwest and Gulf Coast oil-producing regions.

Worthington Pump & Machinery Corp., Harrison, N. J., reports that it has entered the new year with the largest backlog of unfilled orders since 1930.

Pierce T. Wetter, for 10 years on the staff of the American Society of Mechanical Engineers, supervising its technical professional division, has become executive vice president of American Cutting Alloys, Inc., 500 Fifth Avenue, New York.

The White Motor Co. has entered the low-price truck field. Manufacture of the new models will push production schedules 50 per cent over last year, President Robert F. Black said.

The Sperry-Sun Well Surveying Co., Philadelphia, Pa., has appointed S. W. Gurasich its representative in Bakersfield, Calif., with headquarters in the Elks Club, Seventeenth and I Streets.

J. I. Robinson has assumed the office of vice president of Crane Limited, Canada. He succeeded J. Austin Murphy, who retired from active service after 51 years with the company.

The Manhattan Rubber Manufacturing division of Raybestos-Manhattan, Inc., Passaic, N. J., has opened a new branch office and warehouse at 778 Brannan Street, San Francisco, under the management of A. R. Bradshaw.

E. S. Bissell, technical adviser in the instrument division of the Bausch & Lomb Optical Co. since 1929, has joined the Mixing Equipment Co., Rochester ,N. Y., as sales manager. His duties will include direction of advertising and sales promotion.

The Condit Electrical Manufacturing Co., subsidiary of the Allis-Chalmers Manufacturing Co., is now being operated as a company unit. The plant, at 1344 Hyde Park Avenue, Boston, Mass., now called the Allis-Chalmers Manufacturing Co., Condit Works, specializes in switchgear products.

New Larkin Warehouse

The Larkin Packer Co., St. Louis, Mo., has opened a new warehouse in Shreveport, La., at 818 Louisiana Avenue, under the direction of T. J. Spikes. This warehouse will carry a complete stock of Larkin equipment, giving special attention to the particular equipment used in that immediate territory.

Important Features Offered in Frost "Oilless" Generator

Besides the advantages of plenty of correct lubricant sealed in, to run from six months to a year, and with dirt and other injurious elements positively sealed out, the Frost vertical 5-kilowatt "Oilless" Turbo generator possesses other improvements.

Dynamic balance—that is, a running balance—is obtained on all the rotating assembly at the operating speed before being incorporated in the construction of these machines. This tends to produce an almost vibrationless piece of mechanism, hence long bearing life. An antirunaway device is built into the valve in such a way as to prevent excessive speed or "runaway," with the resultant burning out of the derrick lights and sometimes the machine itself. Ball swivel joints—the same as those on an automobile—are used in the governor train in order to reduce friction or binding at any point, tending highly to increase the sensitiveness of the governor and governor valve, thereby giving closer regulation under all conditions.

These generators are made by the R-F Electrical Manufacturing Co., Shawnee, Okla., and distributed through the supply companies by the Bettis Sales Co., Houston, Tex.

G. E. Builds Addition in Dallas

A three-story concrete and brick addition to the General Electric Building in Dallas, Tex., will be constructed immediately, according to an announcement by the company. The structure will adjoin the office and warehouse building at Lamar and Corbin Streets, and will provide all departments with permanent headquarters in Dallas.

Bridgeport Store in Kermit

The Bridgeport Machine Co., Wichita, Kans., has established a branch store in Kermit, Tex., placing Bridgeport equipment and service within convenient reach of many West Texas and New Mexico operators.

ALLSTEEL PRODUCTS GETTING READY FOR BIG YEAR

The Allsteel Products Manufacturing Co., Wichita, Kans., which scored unusual gains in the volume of its business in 1936, expects a still greater advance this year. The company enlarged its facilities during the depression. Two large brick and steel buildings, a commodious assembly building and an air-conditioned office have been completed. A brick welding shop and a brick warehouse are under construction. The company specializes in oil-field servicing winches, portable drawworks and pipe-line booms. The picture shows the engineering and office organization.

Oil Man's Calendar

January

21-22—Minneapolis, Minn., Northwest Petroleum Association, Minnesota Division, West Hotel.

25-26—Oklahoma City, Okla., Associated Motor Carriers of Oklahoma, annual convention.

26-28—Sioux Falls, S. D., South Dakota Independent Oil Men's Association, Cataract Hotel.

February, 1937

8-10—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel.

15-19—New York, American Institute of Mining and Metallurgical Engineers.

17-18—Peoria, Ill., Illinois Petroleum Marketers Association, annual convention and marketing exposition, Hotel Pere Marquette.

23-25—Milwaukee, Annual Convention, Wisconsin Petroleum Association.

23-25—Columbus, Ohio, Ohio Petroleum Marketers Association, annual convention and Trade Exposition, Hotel Deshler-Wallick.

23-25—Milwaukee, Wis., Wisconsin Petroleum Association annual convention, Plankinton Hotel.

Memphis, Tenn., Southwest Sales Conference, Natural Gas Department.

24-25—Des Moines, Iowa, Iowa Petroleum Association.

25-26—Tulsa, Mid-Continent district, A.P.I. Division of Production, Mayo Hotel.

March

1-5—Chicago, American Society for Testing Materials, regional meeting and committee week, Palmer House.

10-11—Indianapolis, Indiana Independent Petroleum Association Spring Convention and Refiners' and Suppliers' Exhibit, Hotel Severin.

12—Oklahoma City, Okla., Interstate Oil Compact Commission meeting.

15-19—Philadelphia, Pa., National Oil Burner & Air Conditioning exposition and convention, Convention Hall, Commercial Museum.

17-19—Los Angeles, Calif., A.A.P.G. annual meeting.

23—New York, Oil Trades Association of New York.

April

7-9—Birmingham, Ala., American Institute of Mining and Metallurgical Engineers, Open Hearth Conference.

8-10—Shreveport, La., Petroleum Industry Electrical Assn.

13—Los Angeles, Calif., American Petroleum Institute, Division of Production, Pacific Coast district, Biltmore Hotel.

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

28-30—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

May

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

May—June

Late May/early June—Paris, France, Second World Petroleum Congress, during International Exposition.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

17-19—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seeandbee," sailing from Buffalo, N. Y.

October

11-16—Houston, Tex., Oil-World Exposition.

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4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

For Sale—Equipment

HIGH PRESSURE VESSEL

1—Cross Reaction chamber, 3'8 outside diameter x 3'0 inside diameter x 40'8 overall length, one flanged 18" bottle necked opening each end. Perfect condition. Absolutely straight and cylindrical.

Large quantity gasoline and refinery plant equipment; pipe, valves and fittings.

Phone— Wire— Write—

BROWN-STRAUSS CORPORATION

Main Office—1446 Guinotte—Kansas City, Mo.

Branches:

Arkansas City, Kansas Sapulpa, Oklahoma Pyote, Texas

WELDERS A.C. and D.C. electric motor and engine driven. Reconditioned. Service Co., 3732 Cedar Ave., Cleveland, Ohio.

---

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.

26 West 2nd St. Cincinnati, Ohio

SEVERAL USED ROTARY RIGS

Spudders and Drilling Machines.

Several Steel Derricks & Rotary Equip.

J. S. Daniel, Beacon Bldg., Tulsa

FOR SALE

6500' of 6⅝"—26.40-lb. Pittsburgh Seamless used Drill pipe, Tool Joints welded on, A-1 condition.

Telephone 7-6244 P. O. Box 327

Oklahoma City, Okla.

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5 miles of 4" 8-thd used Iron Line Pipe.

2 miles of 5" 8-thd used Iron Line Pipe.

2 miles of 6" 8-thd used Iron Line Pipe.

PIPE & STEEL SUPPLY CO.

Bellaire, Ohio

LIGHT Rotary Draw Works, Table & Tools. Would make fine Portable Rotary Drilling outfit for 1500 foot drilling and cleaning out. Bargain. G. J. STUMPFF, Box 1123, Texarkana, Texas.

FOR SALE

1—Steel Standard six inch irons complete with tools.

1—Set of rig irons 6" with tools complete.

1—Mud scow complete with hydraulic jacks.

1—Rotary with steel derrick, grief stems, swivel and 350' of 6" upset drill pipe with tool joints. Fish tail bits and 45" reamers.

1—Star No. 38 Tractor with tools fitted with 4 cylinder engine.

1—No. 33W Bucyrus-Erie mounted on Studebaker truck with tools. New.

A large assortment of tools also. If interested, it will pay you to inspect.

WILLIAM H. CATER

2643 W. Monroe St.,

Chicago, Illinois

FOR SALE—85 horsepower Wright gas or gasoline engine attached to reverse clutch with triple chain drive, now drilling well. Call Barnsdall 147, Barnsdall Times, Barnsdall, Oklahoma.

G E GENERATOR FOR SALE: 240 KW, Type ATB, Form PB, 8 PF, 600 RPM, 60 cy.; 3 ph., 2300 V—440-220; direct connected exciter. Used 8 months. Address Box H-623, The Oil and Gas Journal, Tulsa, Oklahoma.

STEEL DERRICKS

For

WILDCATS

We furnish steel derricks, sub structures and engine foundations on well located and financed blocks and take acreage for rental.

Any kind anywhere.

New and used derricks for sale.

J. A. BARBRE & SONS

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WANTED—Steel Building—from 50' to 75' wide, 100' to 125' long, 18' to 20' walls. To support 5 Ton crane. Western Iron and Foundry Company, Wichita, Kansas.

WANTED—66,000 feet of 8⅝" O.D. plain end seamless or lapweld line pipe, weight not less than 19.48 Lb. per foot, and 50,000 feet, 11 Lb. 4½" O.D. screw line pipe. Must be in good condition. Price F. O. B. shipping point. Address P. O. Box 142, Ashland, Kentucky.

Oil Industry Printing

OIL FIELD LEGAL BLANKS

Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

THERE'S ONLY ONE

In the oil industry there is only one service, of any consequence, devoted to the small advertiser wherein without a great outlay of money, a message can be conveyed to the purchasing power of this great industry. Complete dominance of this field, by The Oil and Gas Journal, makes it possible.

Your printed message in these columns will be read by more interested parties than through any other available medium.

Put the Journal on your payroll—make it a part of your sales force. It will outsell anything you have tried before.

Classified Department

The Oil & Gas Journal

TULSA, OKLAHOMA

For Sale—Equipment

Steel Storage Tanks

50—Practically new 80,000-bbl. steel roof tanks, latest type.

125—500,000-bbl. storage tanks at great saving. Prices quoted on request for tanks standing, cut down, or reerected on your grade. Have all other sizes available. All tanks strictly guaranteed.

All kinds refinery equipment, valves, fittings, machinery, pumps and pump repair parts.

Wire—Phone—Write—W. C. Berry

SONKEN-GALAMBA CORPORATION

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KAY COUNTY OKLAHOMA RANCH—2760 acres in one body, all native grass. Well fenced in good condition. Limestone blue stem grass. Southern slope. Well watered with creeks and tanks. Timber on creek. Never been overstocked. Substantial ranch improvements. On all weather road but none through property. Low taxes. Due to age, owner wishes to retire.

MARVIN S. HATCHER, AGENCY,
Ponca City, Oklahoma.

TEN ACRES

FLORIDA'S FAMOUS BOK TOWER SECTION facing paved road and bearing Orange-Grapefruit groves, between 2 pretty lakes. $10 mo. buys. Gillam, 658 Moreland NE, Atlanta, Georgia.

Mailing Lists

MAILING LISTS

Of royalty investors, by deed, from pipe line company records, in every State, including Okla., Kan., Tex., La. and Ark. Also, lists of active retail royalty brokers and investing royalty companies. Lists made special. Please specify.

OIL INDUSTRY MAILING LIST CO.
909 Tulsa Loan Bldg., Tulsa, Okla.

Situations Wanted

Experienced sales engineer with successful record, desires connection with company wanting representation in Mid-Continent area. Address Box H-603, The Oil and Gas Journal, Tulsa, Oklahoma.

ACCOUNTANT-BOOKKEEPER: Desires connection with future opportunity. Single. Age 28. Oil company experience, state and federal income taxes. Accounting and law education. Good references. Address Box H-612, The Oil and Gas Journal, Tulsa, Oklahoma.

Successful Salesman, 36, now employed by large Mfg. Co. desires change to oil well supply, allied line or leasing. Address Box H-622, The Oil and Gas Journal, Tulsa, Oklahoma.

Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

INDEPENDENT geologist working ahead production North Central Texas controls promising wildcat blocks medium shallow drilling desire contact responsible parties. Box 201, Breckenridge, Texas.

GEOLOGIST-PETROLEUM ENGINEER. We desire to contact geologist familiar with Southwest Texas, capable of judging the merit of and buying royalties and settled production. Expense account and participation basis. Write fully. P. O. Box 974, San Antonio, Tex.

Petroleum Eng. Laboratories

GEOLOGIC STANDARDS COMPANY
1600 East 5th Place, Tulsa, Oklahoma.
Porosity-Permeability-Saturation Tests.

For Sale—Maps

Oil map of Mid-Continent. 50c. Texas-Oklahoma county maps $1-$1.50. Oil City Map Co., Fort Worth, Texas.

Leases—Production

LOCATING OIL ON A PER CENT New fields located for a third of the oil. All expenses must be paid in advance. Loyal E. Scott, Consultant, Aurora, Mo.

LEASES all over South Arkansas East Texas. Twenty acres up dollar acre. Owner-Attorney, Box 1122, Little Rock, Arkansas.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

INVESTIGATE TURNER VALLEY Holder extensive freehold oil rights North end Turner Valley, Alberta, would lease on advantageous terms to party undertaking drilling operations. Producing wells in neighborhood. Particulars on application to Box 66, Calgary, Canada.

FOR SALE—Oil property in Lima, Ohio field. Fourteen producing wells. L. R. Neville, Box 107, Roundhead, Ohio.

WILL LEASE for oil 5 tracts, 4180 acres, Bent County, E. Colo. H. B. BUDDENBORG, Osawatomie, Kansas.

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NEW MEXICO, Chaves County, 1000 acre solid lease block. 9 years, 5c rentals, price 30c per acre. Roy G. Barton, Box 191, Clovis, New Mexico.

LEASES and drilling locations on geological structure near production in Illinois. Lock Box 12, Bethalto, Illinois.

Selling North Louisiana drilling blocks, production and leases for drilling. Write G. Lucas, 208 Milam St., Shreveport, La.

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BUY—SELL

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SEVERAL tracts very cheap land in Northeast Texas. Active wildcat area. Also drilling block in shallow area. Box 203, Clarksville, Texas.

FOR SALE—Valuable minerals or fee land 4 miles east Hawley, Jones Co., Texas. Big play. About 1800 feet new location. Leased major company. Dr. Whiting, Box 451, Abilene, Texas.

NEW MEXICO Oil Bulletin 200 pages, including structure maps, ownerships and large state oil map, etc. Send $2.00, full price. Roy G. Barton, P. O. Box 191, Clovis, New Mexico.

For Sale—Maps

STATE OF TEXAS

1937 REVISED EDITION MAP

New and Enlarged to include parts of New Mexico, Oklahoma, Arkansas and Louisiana. Shows oil and gas fields, etc. Price $1.00. Write for folder on county ownership and oilfield maps.

ZINGERY OIL MAP COMPANY

Fair Building Fort Worth, Tex.

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WHERE CORROSION
. . . *is a problem*

WALWORTH HI-TEST PIPE
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Manganese 0.80 to 1.00%
Silicon 1.90 2.25
Total Carbon 3.10 3.40
Phosphorus Under 0.60
Sulphur " 0.12
GENERAL RECOMMENDATIONS: Water, Gas and Air Lines; Building Vent and Waste Lines; Golf Course Sprinkler Systems; etc.
Also lines in general where corrosion conditions are such that steel or wrought iron pipe does not give satisfaction.
Made in plain or threaded ends in lengths up to 20' long.
WALWORTH C.N.I. ALLOY PIPE
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Nickel 0.30 to 0.50%
Chromium 0.20 0.30
Manganese 0.70 0.80
Silicon 2.25 2.45
Total Carbon 3.20 3.40
Phosphorus Under 0.20
Sulphur " 0.12
GENERAL RECOMMENDATIONS: Sewage Disposal Lines; Sulphuric Acid Lines 60 deg. Bé. and over; Condenser Coils; Cinderfill Lines; Dye Vat Waste Lines; Char Filter Waste Water Lines; Soap Lines; Salt Water Lines; etc.
Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.
Pipe Fittings also supplied of C.N.I.
WALWORTH NI-RESIST PIPE
CHEMICAL PROPERTIES
Nickel 12.00 to 15.00%
Copper 5.50 6.50
Chromium 1.25 2.25
Manganese 0.90 1.20
Silicon 1.90 2.40
Total Carbon 2.70 3.10
Phosphorus Under 0.30
Sulphur " 0.12
GENERAL RECOMMENDATIONS: Laboratory Waste Lines; Caustic Lines; Hydrochloric Acid Gas Lines; Alum Lines; Sulphurite Pulp Mill Blow Pit and Waste Lines; Weak Sulphuric Acid Lines at normal temperatures; etc., etc.
Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.
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WALWORTH

VALVES FITTINGS and TOOLS
Backed by 95 Years' Service

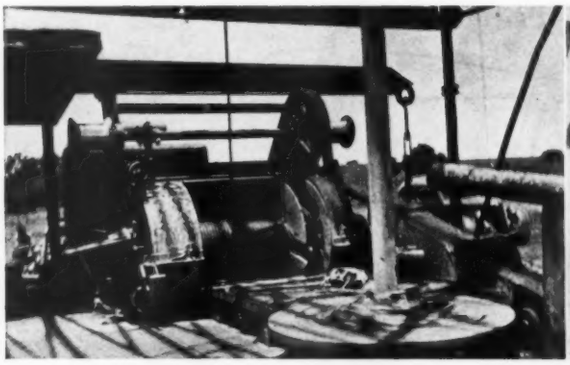
WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

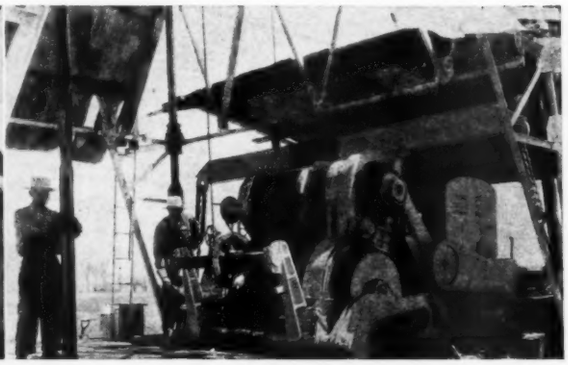
The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $5.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

◂◂LOOK▸▸

DRAW WORKS, AND DOUBLE DRUM TYPE UNITS AVAILABLE IN THREE SIZES WITH NATURAL GAS, GASOLINE, OR DIESEL PRIME MOVERS



Draw Works Available in Single or Double Drum Models



Double Drum Cable Tool Drilling or Cleanout Unit

THE CENTER OF ATTENTION

MAJOR AND INDEPENDENT OIL COMPANIES — SERVICING CONTRACTORS

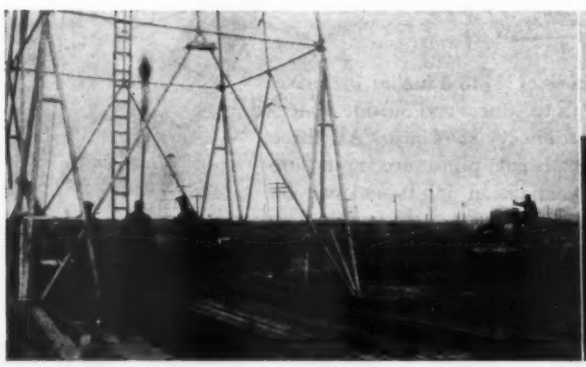
CARDWELL ALLSTEEL
REG. U. S. TRADE MARK PAT. OFFICE
THIS TRADE MARK INSURES HIGHEST QUALITY AT LOWEST PRICE

DRILLING CONTRACTORS — PIPE LINERS

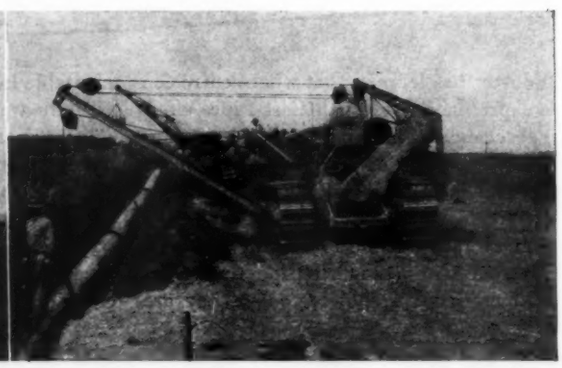
As Manufacturers of Skid Type or "Caterpillar" Tractor Mounted Oil Well Servicing and Drilling Units, and Live Boom "Caterpillar" Tractor Mounted Pipe Line Sideboom Units.

SKID TYPE SERVICING UNITS AVAILABLE IN FOUR SIZES WITH NATURAL GAS, GASOLINE, OR DIESEL PRIME MOVERS.

TRACTOR MOUNTED SERVICING UNITS AND SIDEBOOM UNITS AVAILABLE IN FOUR SIZES WITH "CATERPILLAR" GASOLINE OR DIESEL TRACTORS.



Single Drum Unit for Rod and Tubing Work to Any Depth Dependent on the Size Purchased



Sideboom Unit for Pipe Line Work, or Industrial Work Lifting and Transporting Heavy Loads. A Pipeliner "Thinks" CARDWELL ALLSTEEL

In Any Oil Field—Domestic or Foreign—Where Wells are Being Drilled, Serviced, or Abandoned, and Pipelines Being Constructed or Re-worked Cardwell Allsteel Units in Use Hold the Center of Attention.

——Information and Prices Upon Request——

See pages 83, 84, 85 and 86 of the 1937 Composite Catalog

ALLSTEEL PRODUCTS MFG. CO.

Wichita, Kansas, U. S. A.

801 So. Wichita St., P. O. Drawer 2001

CABLE ADDRESS "ALLSTEEL" PHONES L. D. 289, LOCAL 4-4381—4-4389

...with Multi-Flame Lindewelding

Multi-Flame Lindewelding on a 143-mile 8 in. pipe line. Shown on the gas wagon with the cylinders of Linde Oxygen is an Oxweld Type MP-4 Acetylene Generator.

The three flames of the Multi-Flame Lindewelding Head improve the metallurgy of welds. The small flames preheat, while the large flame welds and post-heats.

you can make Strong, Ductile Welds

Multi-flame Lindewelding, when done properly, produces welds that are as strong as the pipe base material, even when the tensile strength is 110,000 lb. per sq. in. In Lindewelding a minimum of base metal is melted into the puddle. Thus both the efficiency of welding and the uniformity and quality of the weld metal are increased.

By the use of the multi-flame the base metal is preheated before welding and post-heated for slower cooling after welding. This exclusive feature of Multi-Flame Lindewelding makes the weld unusually ductile.

Multi-Flame Lindewelding is fast and economical even under the varied conditions that exist in the field. It saves 15 to 40 per cent in oxygen, acetylene and welding rod consumed, and often as much as 50 per cent in time required to make welds.

The Multi-Flame Lindewelding process is a result of the closely coordinated laboratory, development and field engineering facilities of the Linde organization. It reflects the vast welding experience achieved through the application of Linde Process Service on more than 20,000 miles of pipe lines. Why not have Linde work with your engineers on their next pipe line project? This help is available from a Linde Office near you. Write or phone for complete information. The Linde Air Products Company—Unit of Union Carbide and Carbon Corporation—New York and Principal Cities.

Everything for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

PRODUCTS OF UNITS OF UNION CARBIDE AND CARBON CORPORATION

THE WAVE OF ACCEPTANCE

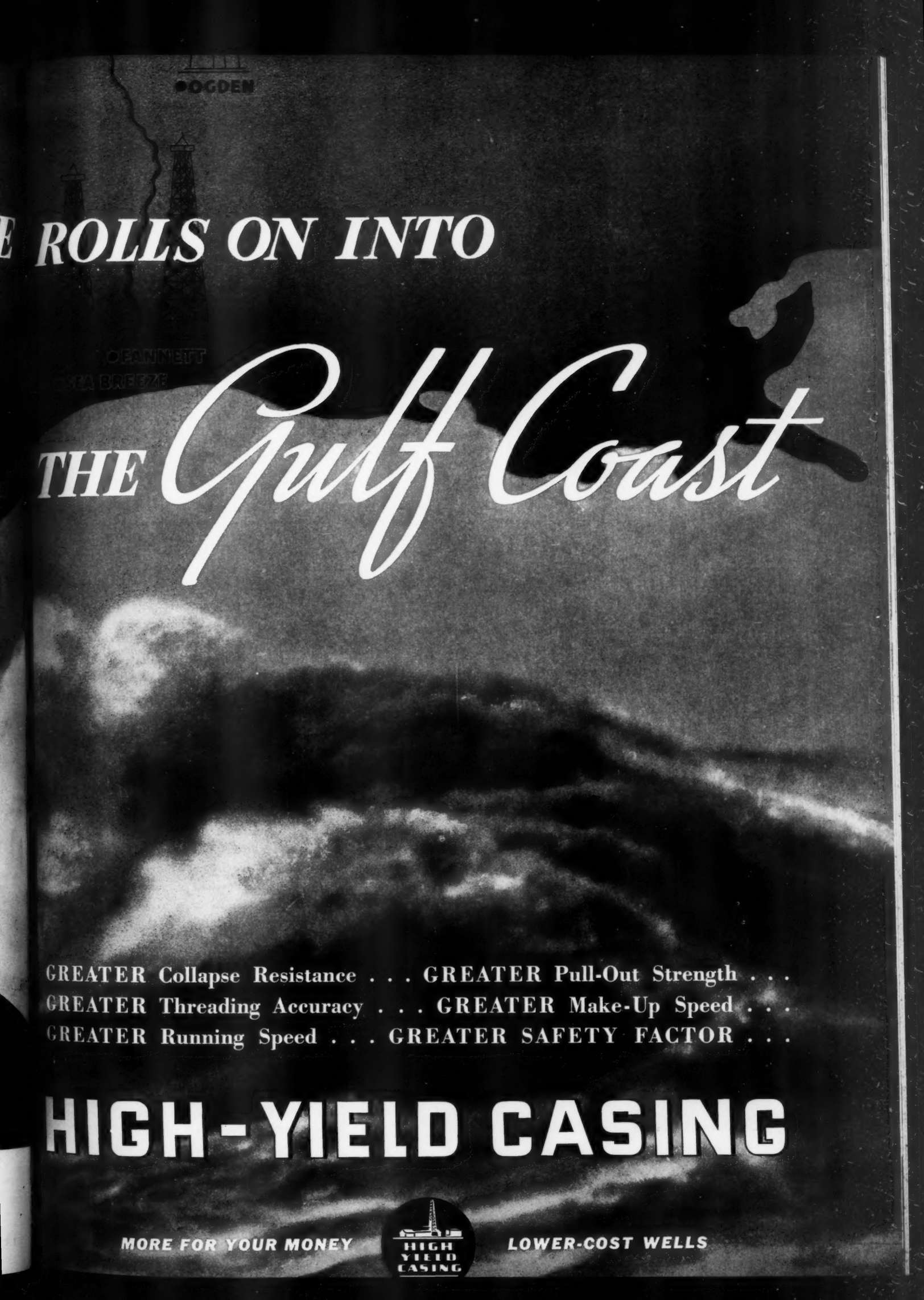
A.O. SMITH
CORPORATION

MILWAUKEE, WISCONSIN • *BRANCH OFFICES:* NEW YORK
CLEVELAND, CHICAGO, TULSA, HOUSTON, LOS ANGELES

MAKING STEEL WORK FOR YOU AS IT NEVER DID BEFORE

SMITH HIGH-YIELD CASING
SMITH LINE PIPE—SMITH PRESSURE VESSELS

Manufactured under U. S. Patent No. 1,993,842 © A. O. Smith Corporation, 1937


OGDEN
E ROLLS ON INTO
THE Gulf Coast
GREATER Collapse Resistance . . . GREATER Pull-Out Strength . . .
GREATER Threading Accuracy . . . GREATER Make-Up Speed . . .
GREATER Running Speed . . . GREATER SAFETY FACTOR . . .
HIGH-YIELD CASING
MORE FOR YOUR MONEY
HIGH YIELD CASING
LOWER-COST WELLS

THIS IS "MUSIC" TO ANY OPERATOR'S EARS

Ten years of hard steady drilling in Louisiana and Texas fields with maintenance costs confined to an occasional new paint job and a few bolts. Sounds *too* good maybe, but it's just the kind of service that Parkersburg Derricks are giving other operators all over the country . . . and the kind that *you* can expect. Ask any Parkersburg customer in your field. He will also tell you that the "reason why" is superior design and faultless fabrication.

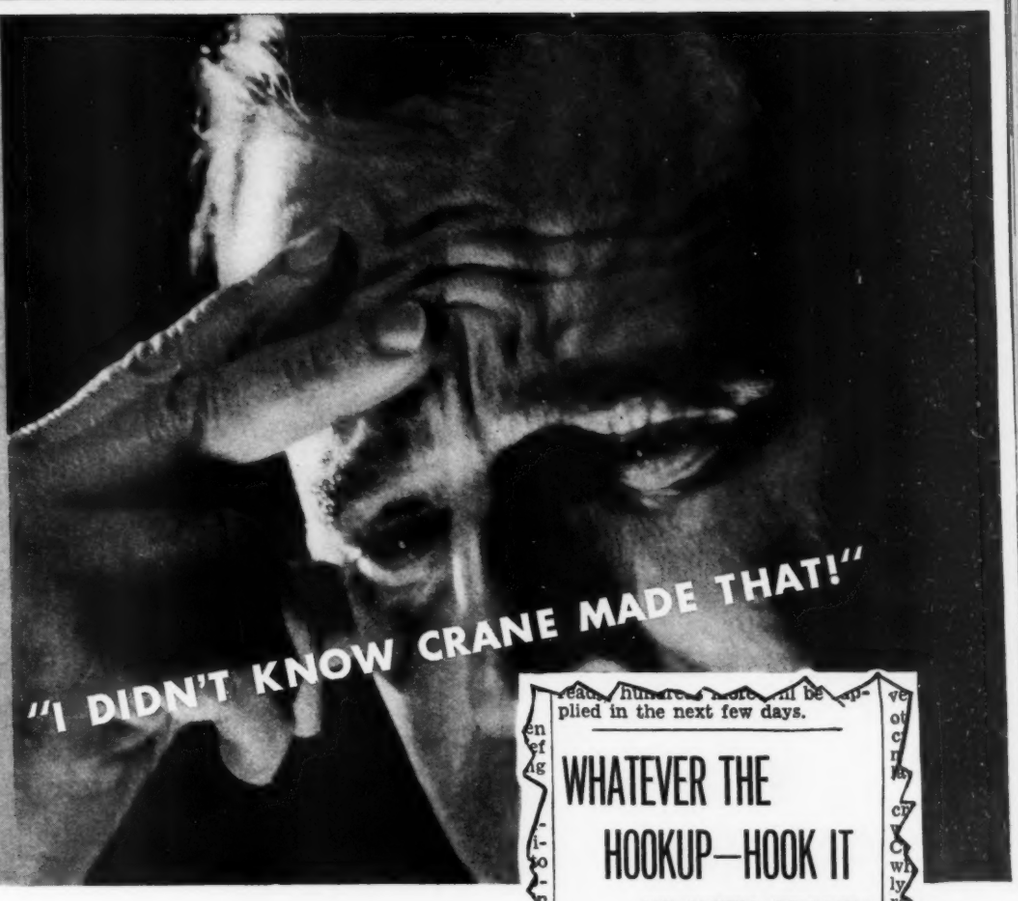
These superior derricks are available in your field from convenient warehouse stocks. You don't have to order days ahead of time to be sure of service. Delivery is only a matter of loading a truck. It's easy to see what this means when you're really in a hurry . . . and why so many other operators believe it is good judgment to look to Parkersburg for derricks . . . where superior quality and dependable service go hand in hand.

● *Above photo shows a Parkersburg 136' Heavy Duty Derrick. This complete outfit also includes steel Substructure, Engine Support and Platform, Pipe Rack and Pipe Ramp, and Stairways. An all steel outfit, in the long run, will prove to be more economical than any other type.*

PARKERSBURG
Faultlessly Fabricated
DERRICKS

THE PARKERSBURG RIG & REEL COMPANY
PARKERSBURG, WEST VIRGINIA
Dallas . . Houston . . Los Angeles . . New York . . Tulsa
Branches in all active fields

Rx Remedies FOR NEW KINDS OF "HEADACHES"



The young engineer was worried by a problem that was new to him. He had come to Crane for help. He thought he had to have a "special" valve to fit his conditions. He didn't think anyone had ever made exactly the thing he needed. Could we cure what he called "a new kind of headache"?

It took only a few minutes to find the answer—a standard Crane valve.

Of course, solving valve problems isn't always so easy. Every once in a while someone, somewhere, finds a new way to torture a valve. That calls for special research. But for most "new" valve problems Crane has solutions, proved and ready for use.

The Crane No. 52 Catalog contains 764 pages of useful information for valve users—3,400 illustrations—38,000 items and dimensions. It presents the world's largest and most complete line of valves and fittings, tested in the laboratory and on the job.

Use your Crane Catalog whenever you need valves, fittings, pipe or accessories.

CranEquip for satisfaction.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO, ILL.

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

WHATEVER THE HOOKUP—HOOK IT UP WITH CRANE!

TULSA, OKLA., Dec. 17—Flowing well or pumping well hookups—mud, steam, oil or water lines—high pressures or low—high temperature or low temperature corrosion—whatever your conditions, Crane has valves and fittings to fit them.

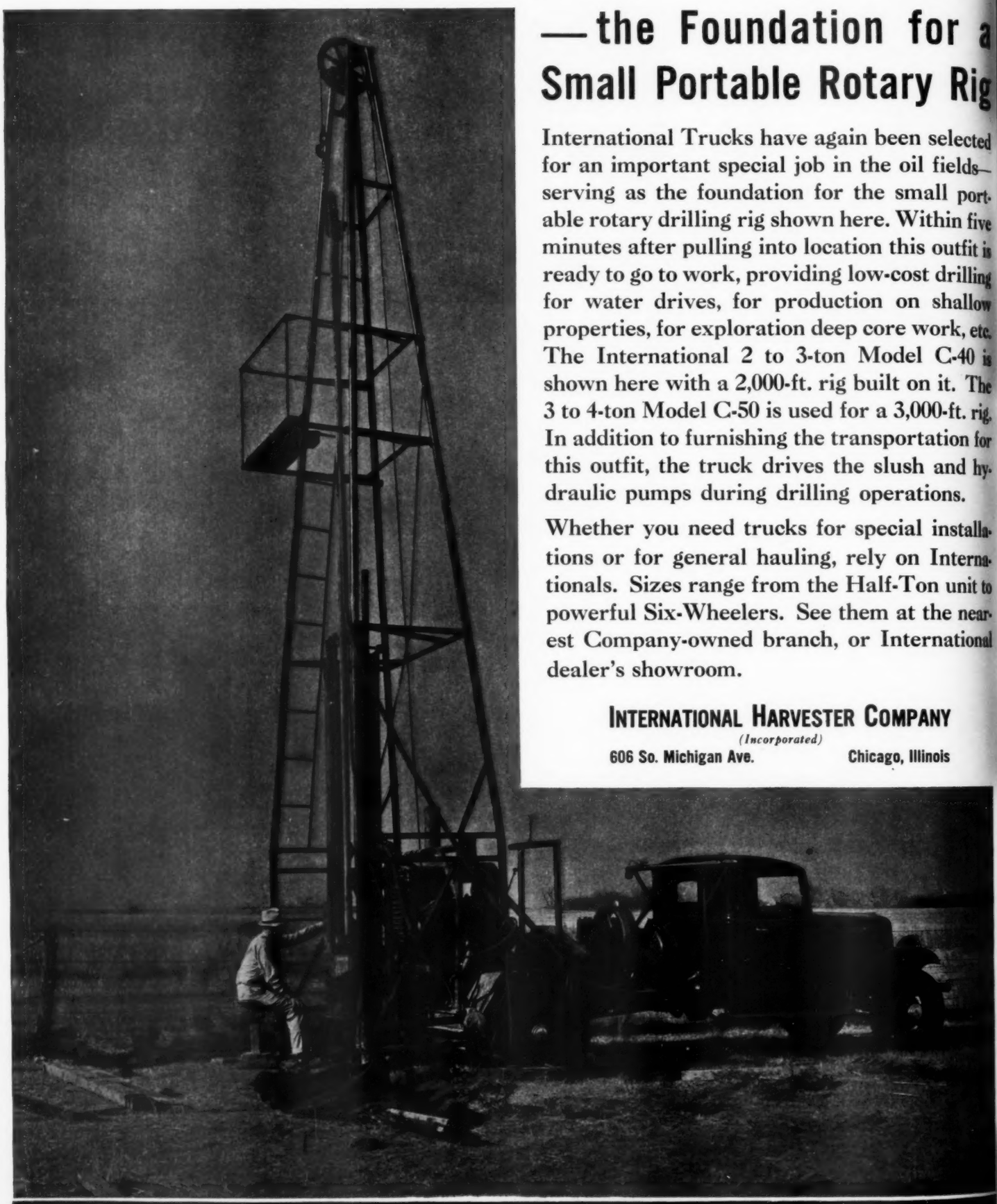
Crane valves and fittings, in materials and design, are built from the ground up to give the kind of service that the oil country demands. When you write Crane into your specifications, you are sure of getting the maximum in performance—for that's the way Crane metallurgists and designers read their A. P. I. and A. S. M. E. specifications, and that's the way CranEquipment has to show up in the field before Crane gives it recognition in the regular Crane line.

If you need valves, fittings or piping for some special job, come to Crane first. You are likely to save yourself a lot of expensive experimenting because Crane has had 82 years of experience in finding the right answers to valve and fitting problems, and the results are yours for the asking.

CranEquip Everywhere

There are Crane valves or fittings in brass, iron, steel and in alloys. We fabricate pipe true to blueprint and uniformly strong throughout. CranEquip and you have the premium value of a single source of responsibility adequate for every service you need.

INTERNATIONAL TRUCKS



—the Foundation for a Small Portable Rotary Rig

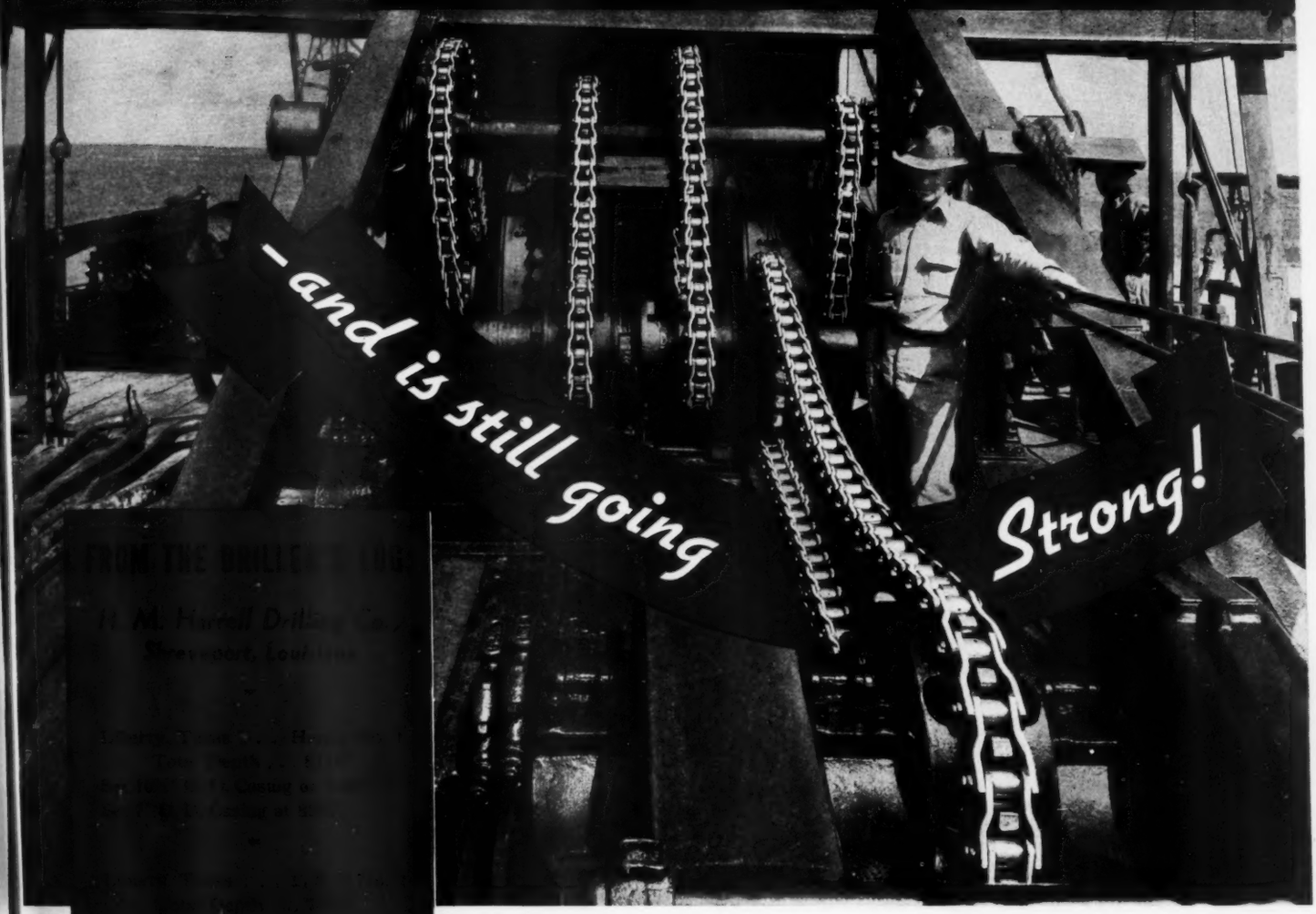
International Trucks have again been selected for an important special job in the oil fields—serving as the foundation for the small portable rotary drilling rig shown here. Within five minutes after pulling into location this outfit is ready to go to work, providing low-cost drilling for water drives, for production on shallow properties, for exploration deep core work, etc. The International 2 to 3-ton Model C-40 is shown here with a 2,000-ft. rig built on it. The 3 to 4-ton Model C-50 is used for a 3,000-ft. rig. In addition to furnishing the transportation for this outfit, the truck drives the slush and hydraulic pumps during drilling operations.

Whether you need trucks for special installations or for general hauling, rely on Internationals. Sizes range from the Half-Ton unit to powerful Six-Wheelers. See them at the nearest Company-owned branch, or International dealer's showroom.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
606 So. Michigan Ave. Chicago, Illinois

INTERNATIONAL TRUCKS

We recommend it for 5000′ wells — yet this *red-hed* Chain Drilled Four 8000′ wells



● Here's an example of the margin of safety that's built into every Link-Belt chain. We do not recommend RED-HED for deep drilling, yet it performed to the entire satisfaction of this operator in drilling these four deep Gulf Coast wells. The high speeds and heavy loads encountered in drilling these wells would have been a big assignment for even the most costly chain, yet RED-HED did the job . . . and it's still going strong, thanks to the men on the derrick floor who know how to take proper care of their equipment.

RED-HED is one of seven types of Link-Belt rotary chain, each of which is designed to meet a particular drilling problem. Address Link-Belt Company, Indianapolis, Philadelphia, Los Angeles, New York, Houston, Dallas, or Oklahoma City (W. H. Abele, Box 305, Rt. 4.)

5909

LINK-BELT

JARECKI

Serves Rodessa

Oil men know JARECKI Stores as standing for "double-barreled" service—(1) service of personnel, (2) serviceable equipment. Our fully stocked Rodessa store runs true to form.

TUBULAR GOODS—Drill Pipe, Casing, Tubing, Line Pipe.

UNION Wire Lines—Rotary, Drilling, Tubing, Casing, Sand Lines. "The Ultimate Low-Cost Wire Rope."

HEWITT Rotary Hose, Steam Hose, Air Hose, Packing and Rubber Goods.

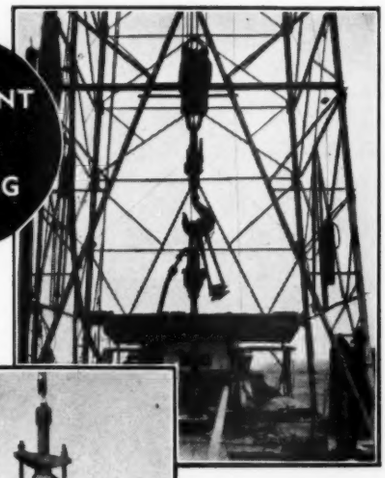
HIGH-PRESSURE WELL Hook-Ups and Connections of all types.

JARECKI "Time-Tested" Valves and Fittings.

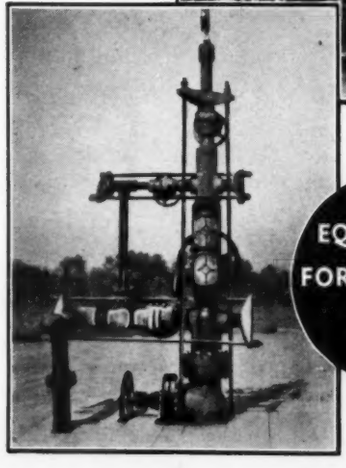
DRILLING BITS, Reamers, Underreamers, Casing and Tubing Heads, Chokes, and special fittings for all purposes.

You'll appreciate JARECKI standards of Service. Call at our Rodessa store.

See JARECKI Section, 1937 Composite Catalog



EQUIPMENT FOR DRILLING



EQUIPMENT FOR FLOWING WELLS

Jarecki
MANUFACTURING COMPANY
"Since 1852"

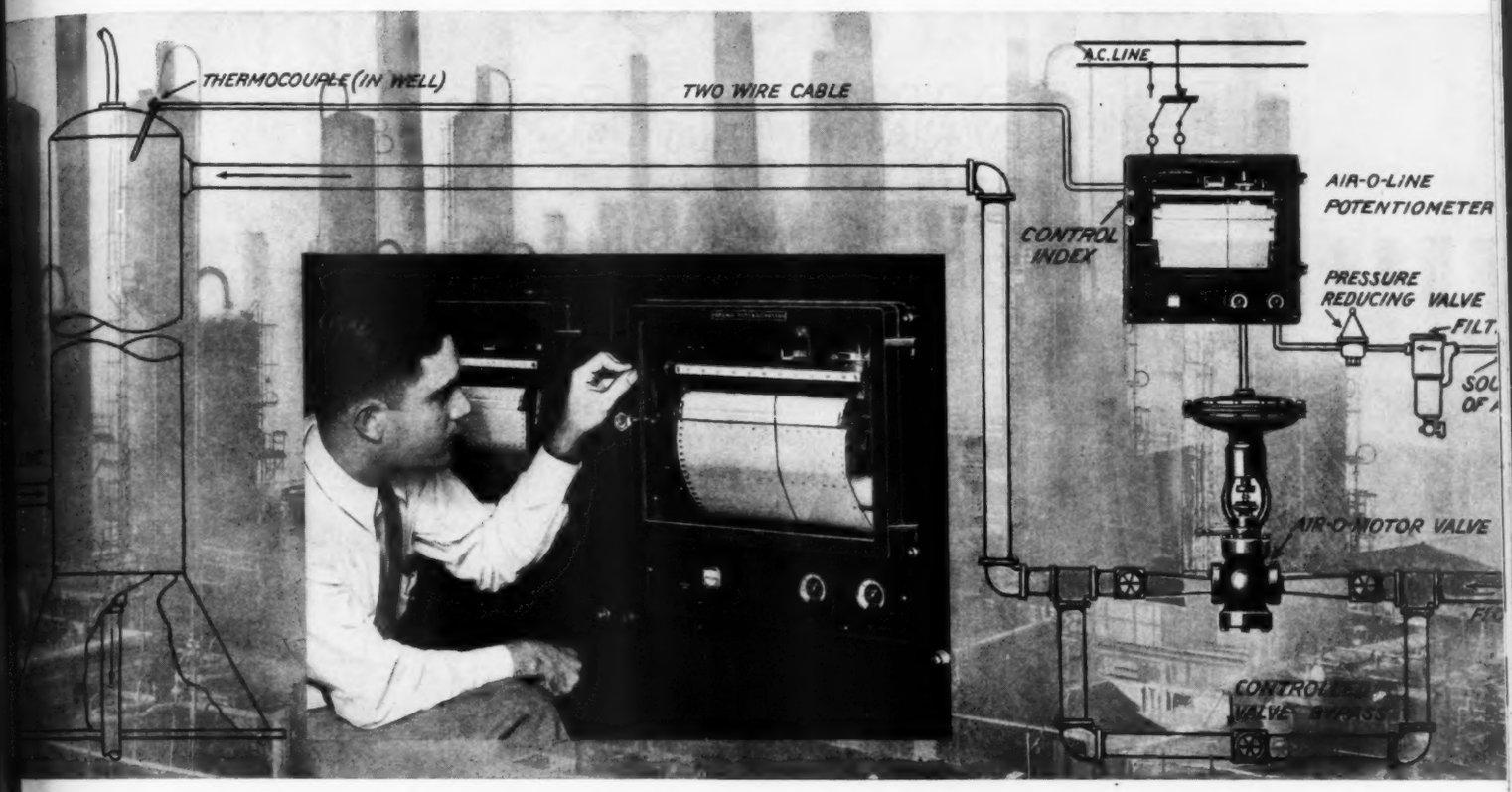
General Offices: St. Louis, Mo. Home Office and Factory: Erie, Pa., U.S.A.

District Offices: Pittsburgh, Pa.; Tulsa and Bartlesville, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

Branch Stores at all important places in the oil country.

NOW Air-O-Line GIVES YOU

The Ideal Combination
FOR TOP OF TOWER CONTROL



Records and Controls Simultaneously

The Brown Air-o-Line Potentiometer Recording Controller combines in one instrument—the precision of the potentiometer and the flexibility of air operated control.

It assures the most accurate measurement and simultaneously records and controls temperatures in fractionating towers and other difficult refinery problems.

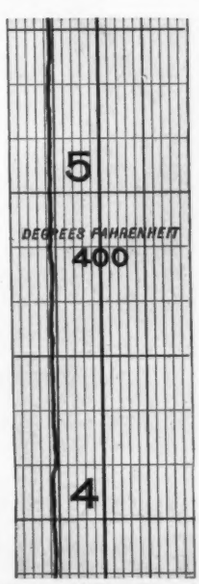
As thermocouples or resistance bulbs are used for temperature measurement—the measuring system cannot be damaged by excess temperature conditions.

Maintenance and operating interruptions are reduced to a minimum because *Electrical Wiring is used* instead of long runs of costly capillary tubing. Replacements are eliminated. Mechanical damage is easily and quickly repaired in the field.

The Brown Air-o-Line Potentiometer Controller can be mounted at any desired location remote from the point of temperature measurement without regard to distance or altitude.

The Brown Air-o-Line Potentiometer Controller responds to temperature changes as small as 1-10 of 1% of full scale. Such changes are continuously recorded *in terms of degrees Fahrenheit* on a direct reading 12-inch strip chart.

It has the inherent ability to position the control valve to suit the demand, automatically, regardless of process thruput or other variables.



Section of Chart Record (Actual Size)

Only in Brown Air-o-Line Potentiometer Controller will you find these outstanding advantages:

1. Combined electrical recording and air operated control.
2. External Calibrated Control Index which enables you to set the control point remotely.
3. "Graduated Throttling Range and Automatic Reset Dials" make it possible to "tune in" to process control as easily as dialing a radio.

With the Brown Air-o-Line Potentiometer Recording Controller closer measurement and positive control are easily obtained by simply setting the control index at the desired point, "tune in" throttling range and automatic reset. Air-o-Line then becomes fully automatic.

Write for Catalog No. 8901, The Brown Instrument Company *a division of Minneapolis-Honeywell Regulator Company* 4488 Wayne Avenue. Philadelphia, Pa. Canadian factory: 117 Peter Street, Toronto. European address, N. V. N., Minneapolis-Honeywell Company, Wydesteeg 4, Amsterdam-C, Holland.

BROWN *Air-o-Line* POTENTIOMETER CONTROLLERS

Outstanding Performance With Simplicity

Vogt

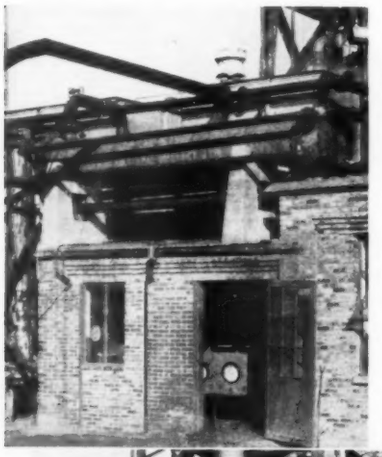
HEAT TRANSFER EQUIPMENT

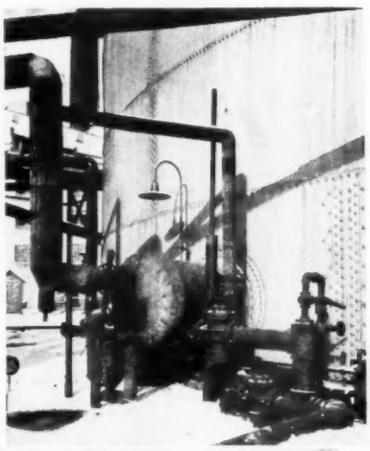
for

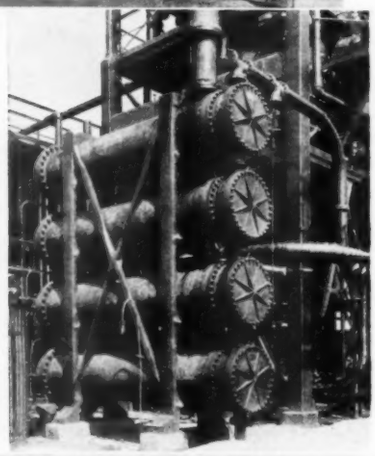
HEATING, COOLING AND CONDENSING LIQUIDS, VAPORS AND GASES

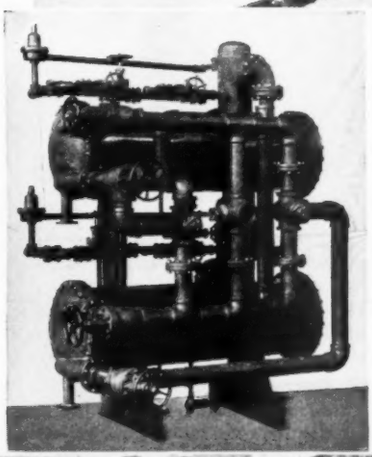
Oil refineries, chemical plants, power plants and related industries are operating Vogt heat transfer equipment with entire satisfaction.

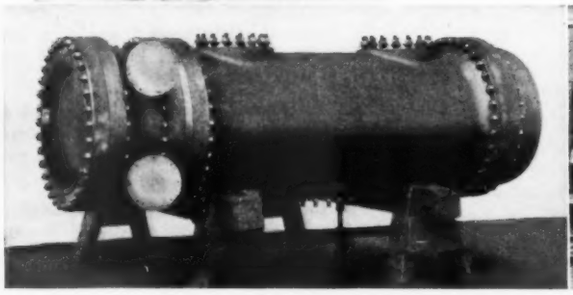
Let our engineers study your problem and recommend types that will exactly meet your requirements.

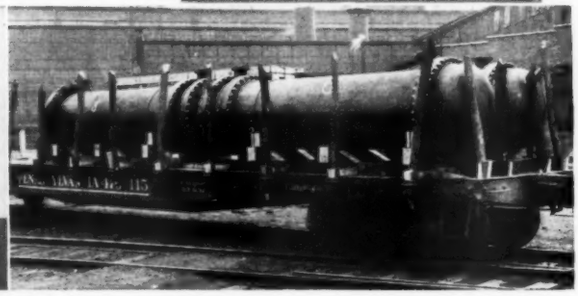












HENRY VOGT MACHINE CO., *Inc.* LOUISVILLE, KY.

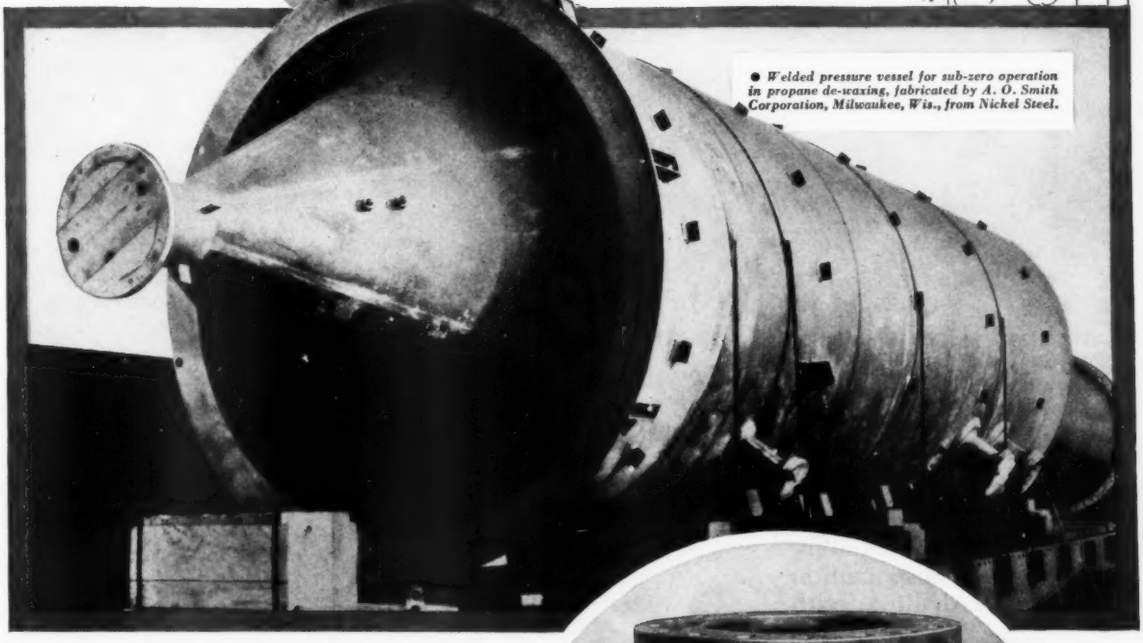
NEW YORK CHICAGO CLEVELAND PHILADELPHIA CINCINNATI KANSAS CITY DALLAS

Manufacturers of: Heat Exchangers, Water Tube Boilers, Drop Forged Steel Valves and Fittings, Oil Refinery Equipment, Ice Making and Refrigerating Machinery.

ALLOY
NICKEL
STEELS

Though temperature goes **DOWN**

. . . impact values stay **UP!**



● *Welded pressure vessel for sub-zero operation in propane de-waxing, fabricated by A. O. Smith Corporation, Milwaukee, Wis., from Nickel Steel.*

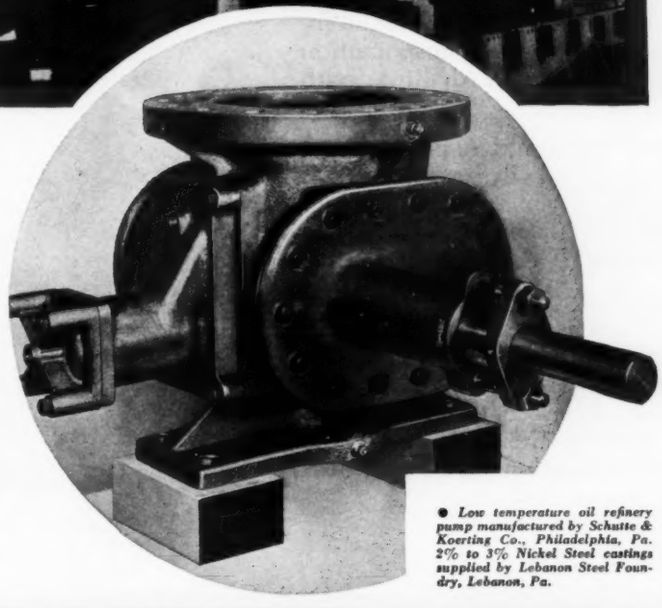
● In choosing metals for propane de-waxing with working temperatures commonly between −50° F. and 75° F., the refiner needs a combination of properties.

Steels for such purposes must have adequate strength combined with ductility at atmospheric temperatures, yet must retain their toughness under sub-zero service conditions. With all this, they must still be amenable to fabricating processes, welding included.

Ordinary carbon steels are OUT . . . even at moderately low temperatures the effects of embrittlement become apparent.

Many refiners have found the answer in low carbon steels alloyed with 2% to 3% Nickel. Commercial applications have shown these Nickel Steels to be consistently the most satisfactory for low temperature service.

Consultation on problems involving the use of Nickel is invited.



● *Low temperature oil refinery pump manufactured by Schutte & Koerting Co., Philadelphia, Pa. 2% to 3% Nickel Steel castings supplied by Lebanon Steel Foundry, Lebanon, Pa.*

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

Talk about Portability

The water problems that are alwa incident to a steam rig fade into in nificance when using Atlas Diese The engines require but a small amou of cooling water when the rig is set up and after that, only occasional make up. No expensive pumping plant an piping are required with the Diesel ri

With transportation of equipment and fuel reduced to a minimum, rigging u time short and fuel cost low, it is n wonder that drilling contractors ar fast discarding cumbersome and ex pensive forms of motive power in fav of the compact and readily portab Atlas Diesel Drilling Units.

The picture at the left above shows how Jack Shaffer of Russell, Kansas loads his OD120 Atlas Drilling Rig on a five-ton International tandem job and rolls away to the location at 25 to 40 miles an hour.

IF one picture is worth ten thousand words, then the two photographs reproduced here will impart more information to the drilling contractors than we could cover in a volume of text.

The drilling contractor who is accustomed to moving steam rigs from one location to another will immediately visualize the saving in transportation and set-up time when drilling with Atlas Diesels.

Not only does the complete power plant arrive on location fully set up and in alignment, but there is also less fuel transportation connected with an Atlas Diesel powered rig.

Atlas Diesels will burn almost any Diesel fuel that is free from dirt and water and flows readily. They use but half the number of gallons as gasoline motors of equal power, and because of their far greater thermal efficiency, they use but a fraction of the fuel of a steam rig.

The picture above shows the arrangement of Jack Shaffer's Diesel-Electric Drilling Rig. mud pump drive is mechanical and the drawworks drive is electrical. The entire unit is transportable with a minimum of dismantling.

SEND FOR A COPY OF OUR BULLETIN "ATLAS IMPERIAL DIESELS FOR ALL OIL FIELD SERVICE"

ATLAS IMPERIAL DIESEL ENGINE CO.

OAKLAND, CALIFORNIA · · MATTOON, ILLINOIS

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Gasoline Products Company, Inc., licensor of modern cracking processes, through its comprehensive facilities enables refiners to anticipate these ever-changing economic conditions.

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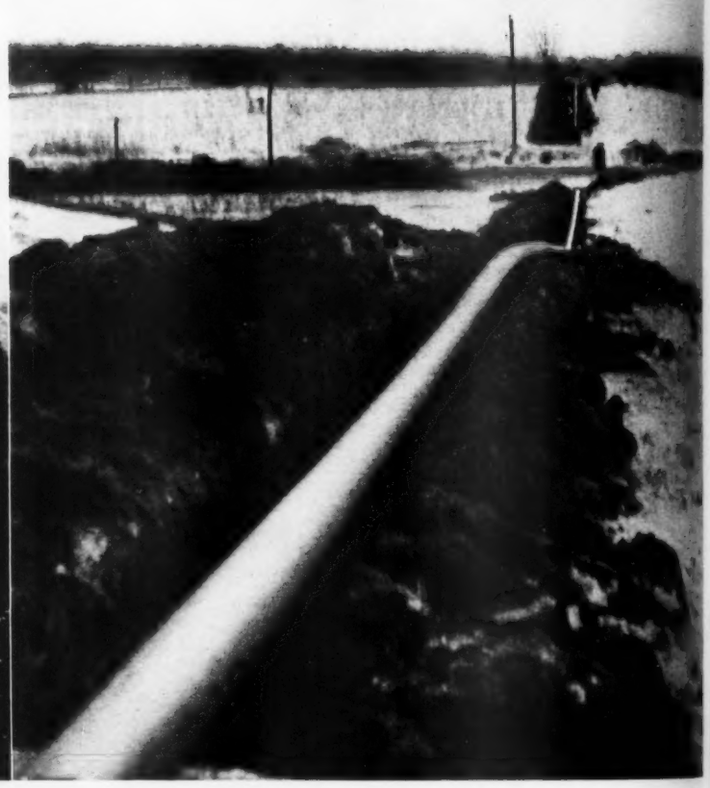
GASOLINE PRODUCTS COMPANY

INCORPORATED

PROVED

12¾" O. D. Republic Electric Weld Line Pipe in Shell oil line between Bakersfield and Caliola, California.



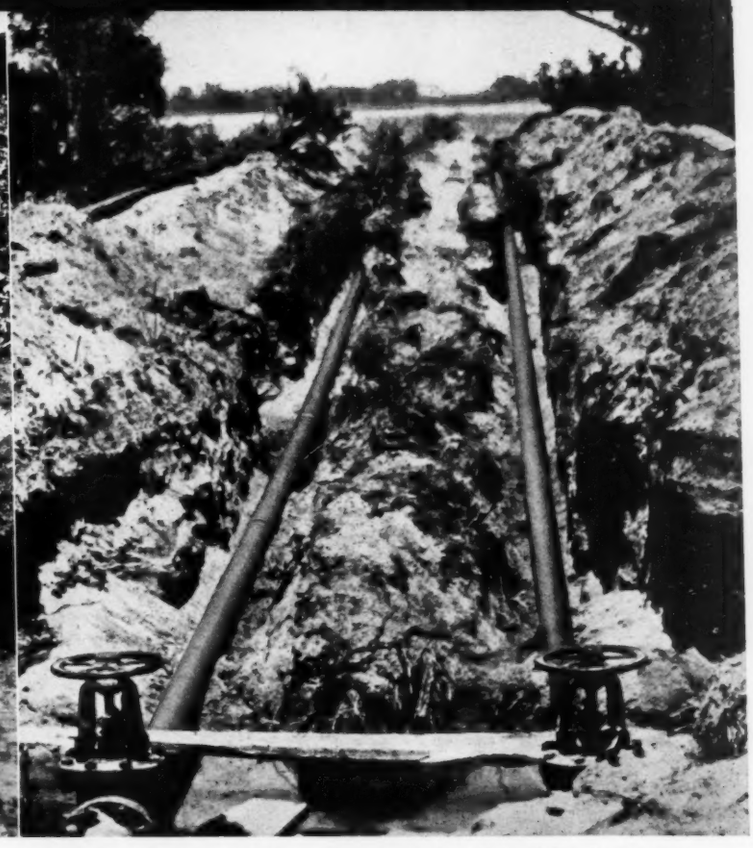
Republic Electric Weld Line Pipe in Standard Oil Company oil line between Mt. Pleasant, Michigan, and Toledo, Ohio.

REPUBLIC ELECTRIC WELD LINE PIPE

OF DEPENDABLE SERVICE

OIL, GASOLINE AND GAS LINES

Republic Electric Weld Line Pipe in Phillips Petroleum Company gasoline line from Borger, Texas to Kansas City and St. Louis, Mo.



Republic Electric Weld Line Pipe in Kansas Pipe Line and Gas Company gas line crossing Platte River, Nebraska.

NOTE THESE FEATURES

— 100% Perfect Weld . . . Uniform Wall Thickness . . . Uniform Diameter . . . Perfectly Round . . . Straight . . . Easy to Weld . . . Easy to Bend . . . Free from Scale Inside and Out . . . Any Desired Yield Point with High Ductility . . . Double Lengths without Mid-Weld. Write for complete detailed information.

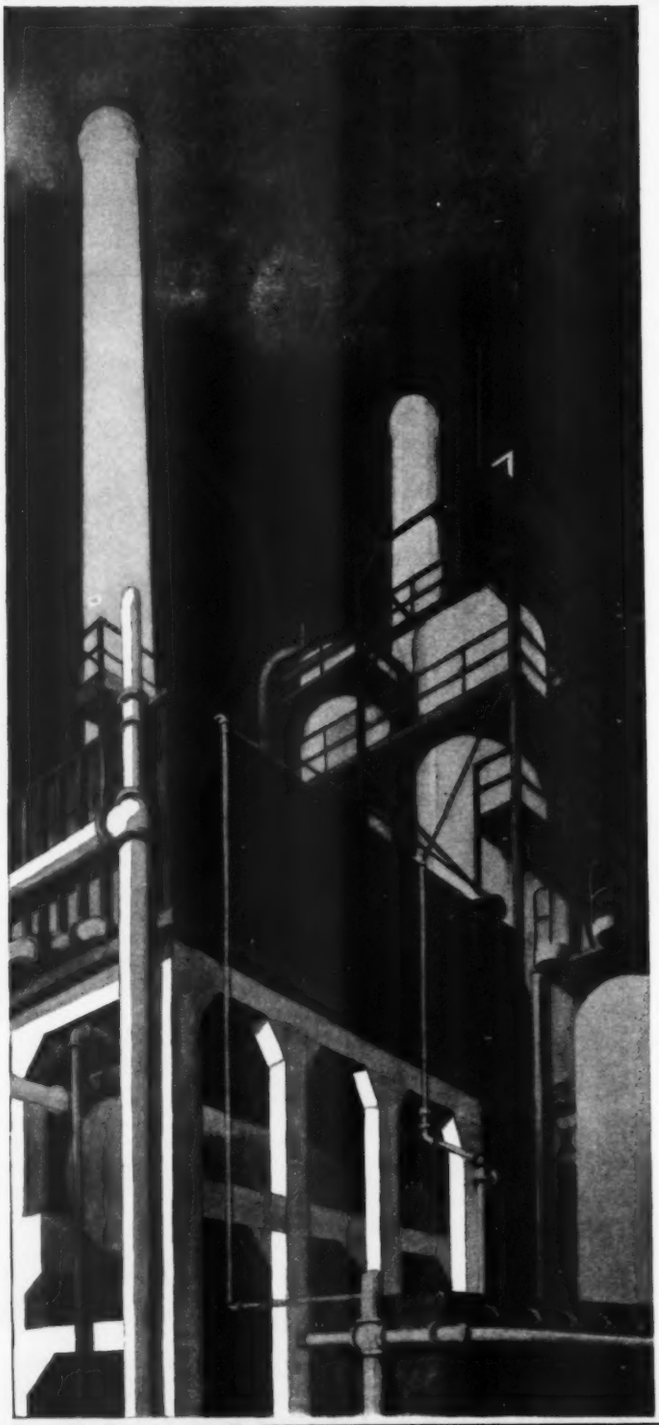
MORE THAN 8000 MILES IN SERVICE

Republic Steel Corporation

REPUBLIC STEEL

When writing Republic Steel Corporation for further information, please address Department OG.

THERMAL



POLYMERIZATION

THERMAL POLYMERIZATION HAS A WIDE FIELD OF APPLICATION

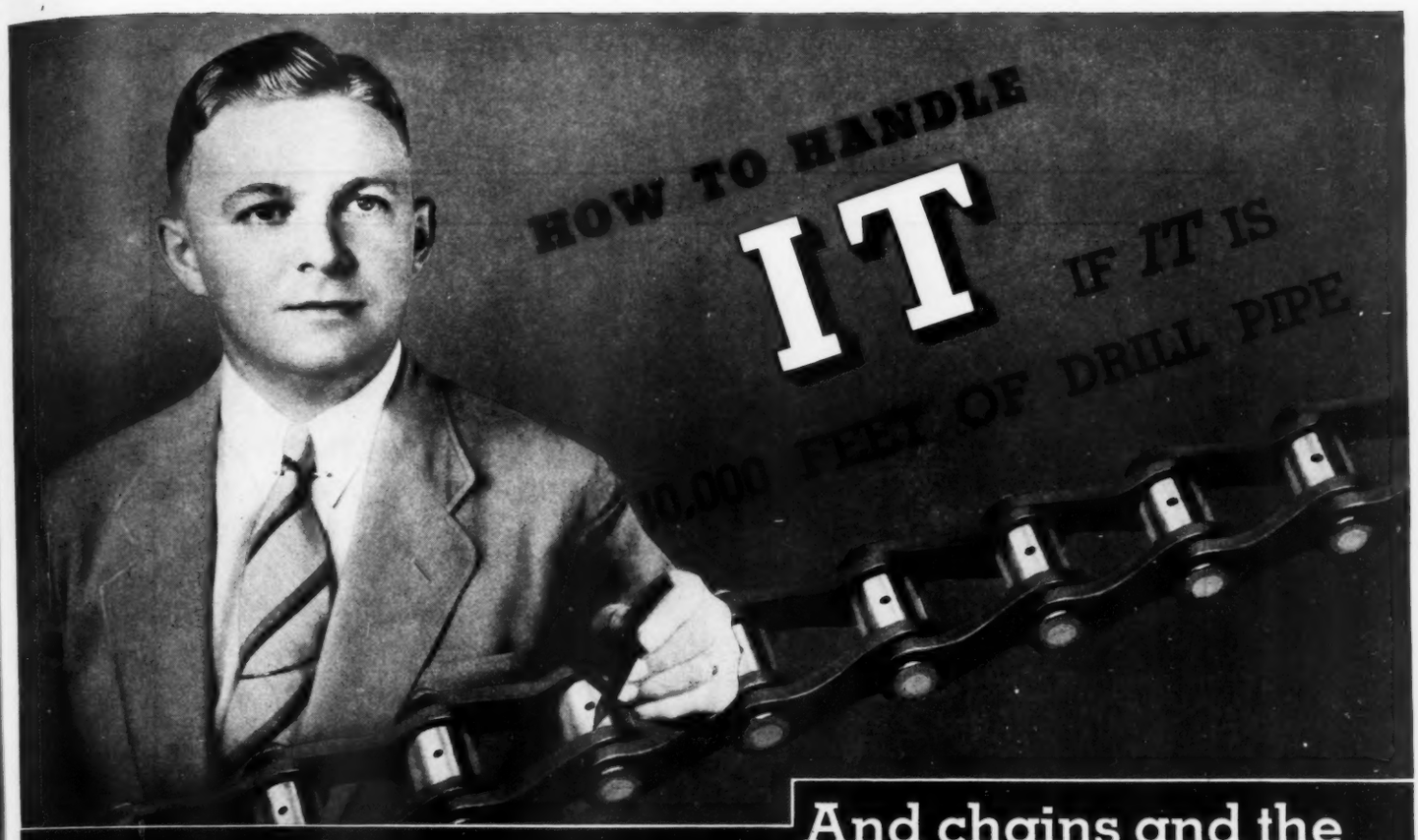
Where opportunity exists for the utilization of by-product gases from cracking equipment or natural gas plants, Thermal Polymerization units may readily be adapted to individual plant equipment to produce a superior blending gasoline.

Such units offer no difficult installation or operating problems. They possess a wide range of usefulness due to the ability to convert both saturated and unsaturated hydrocarbons into motor fuel.

Refiners and natural gasoline plant operators are invited to investigate the possibilities of Thermal Polymerization through this organization or its agent, The M. W. Kellogg Company.

Licenses granted under United States and Foreign Patents by

THE POLYMERIZATION PROCESS CORPORATION
15 EXCHANGE PLACE
JERSEY CITY, N. J.



And chains and the ropes of ten-line blocks must travel faster

● *Use Deepwell*—it can take the higher speed, and the increased working load needed to make a ten-line block travel faster than a six in coming out of modern, deep wells.

How well it can is shown on one Texas well where actual test showed the jackshaft to be turning at 530 r.p.m. resulting in a chain speed of 2650 f.p.m. for DW-4 Chain! On this well a complete round trip was made from the bottom at 10,001 feet in 4½ hours!

These are not recommended speeds—but they are used—and this user says that unitized rigs with Deepwell chains greatly increased chain life measured by footage drilled.

Deepwell is the lowest-cost chain for all-round drilling. Insist on Deepwell for your deep well drilling.

CHAIN BELT COMPANY
1619 West Bruce St., Milwaukee, Wis.

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Lucey Products Corporation — Murray-Brooks Hardware Company, Ltd.
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CHAIN BELT COMPANY OF MILWAUKEE

REX

Deepwell Chabelco

REX DEEPWELL DW-3—DW-4 • REX CHABELCO 1033—1244

RECOGNITION

POLYMERIZATION as an integral part of a cracking or a fuel gas recovery system produces additional motor fuel at low investment and operating costs. This fact is creating world attention.

Recognition of its commercial importance is plainly seen by two orders recently received by ALCO:

A large Combination Distillation, Cracking and Polymerization Plant for South America. This plant gives high octane gasoline without reforming.

A large capacity Pyrolysis-Polymerization Plant under construction in Europe for the recovery of aromatic distillate from field gas.

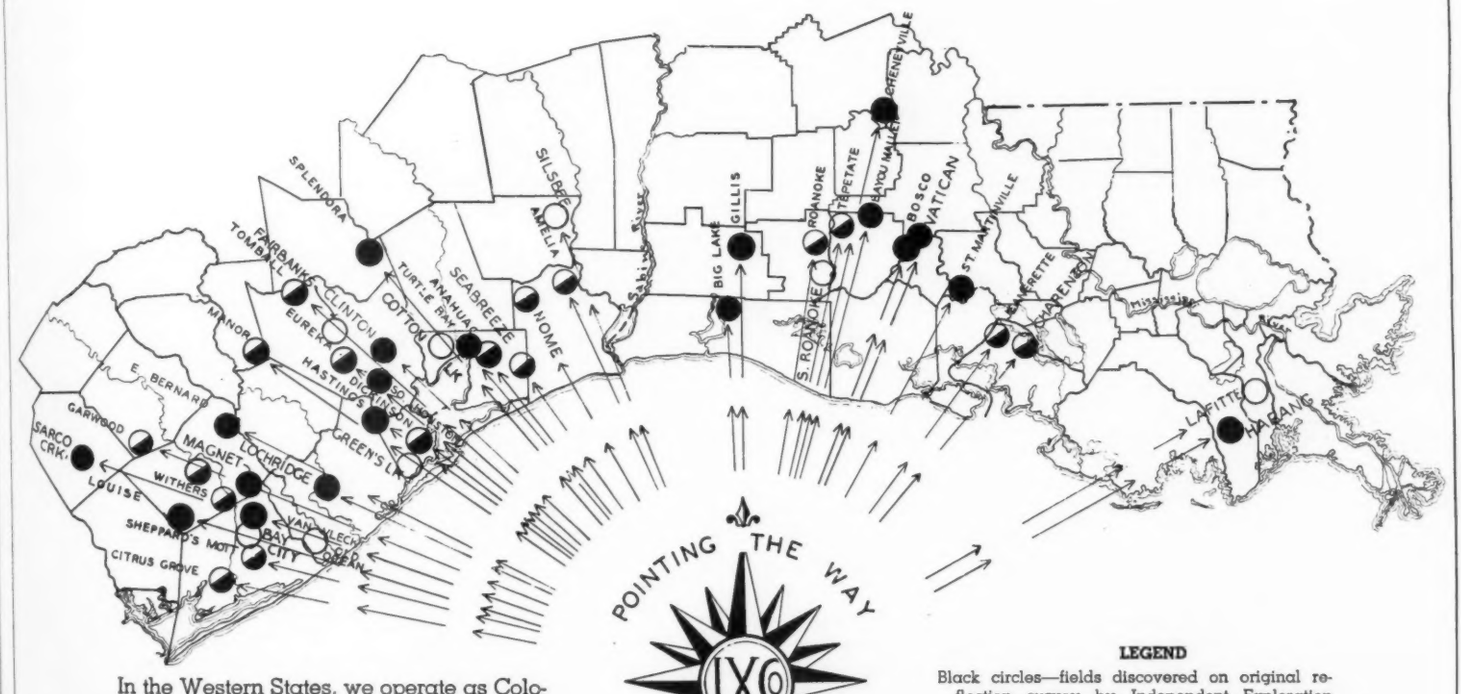
ALCO PRODUCTS

30 CHURCH STREET, NEW YORK, N. Y. *Inc.* ARTILLERY HOUSE, ARTILLERY ROW, LONDON, S. W. 1, ENGLAND

DIVISION OF AMERICAN LOCOMOTIVE COMPANY

RESULTS ACHIEVED

Are the ultimate test of any method of procedure. Since 1932 (date of organization of our Company) there have been proved for production in the Texas-Louisiana Gulf Coast Province **forty-four (44) geophysically-discovered fields.** Of this number, 19 fields (43%) were found on original Reflection Seismograph work done by our Company; 17 fields (39%) were found in areas checked by our Company and recommended by us for drilling, prior to any development; that is, **82% of the total geophysical "hits" were scored by Independent Exploration Company.**



In the Western States, we operate as Colorado Geophysical Corporation, 6210 Midland Savings Bldg., Denver, Colorado. In the Eastern States, Canada, Mexico and Foreign Countries, we operate as Pathfinder Prospecting Company, 120 Broadway, New York City.

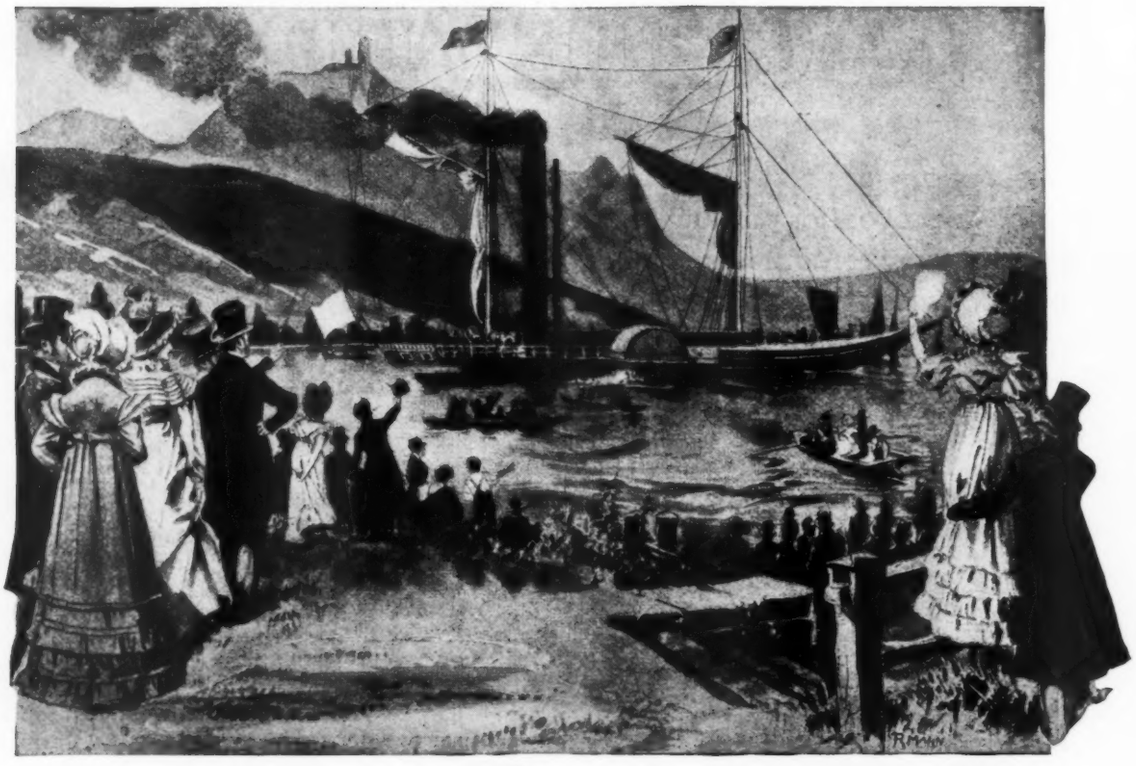
LEGEND

Black circles—fields discovered on original reflection survey by Independent Exploration Company	19
Half-black circles—proved fields checked and recommended by Independent Exploration Company (prior to development) for drilling	17
	36
Total number of fields	44

INDEPENDENT EXPLORATION COMPANY

ESPERSON BLDG. **HOUSTON, TEXAS**

"IT COULDN'T HAPPEN"



..but it did!

PEOPLE called it "Fulton's Folly" and said "It couldn't happen." But on August 7, 1807, the jeers of the incredulous crowd turned to cheers as they watched Robert Fulton's "Clermont" slip away from her dock in New York and head up the river for Albany.

Refiners were skeptical of the early proposals to prevent gum formation in cracked gasoline by the use of antioxidants. They claimed the method was unorthodox in principle. Sulphuric acid, in spite of its adverse effects, was a necessary reagent for gasoline refining.

Today, du Pont Gasoline Antioxidants offer advantages that cannot be ignored. Their performance has displaced scepticism, and many refiners are profiting by the efficiency and economy with which these antioxidants prevent gum formation and discoloration. E. I. du Pont de Nemours & Company, Inc., Organic Chemicals Department, Wilmington, Delaware.

DU PONT
GASOLINE ANTIOXIDANTS

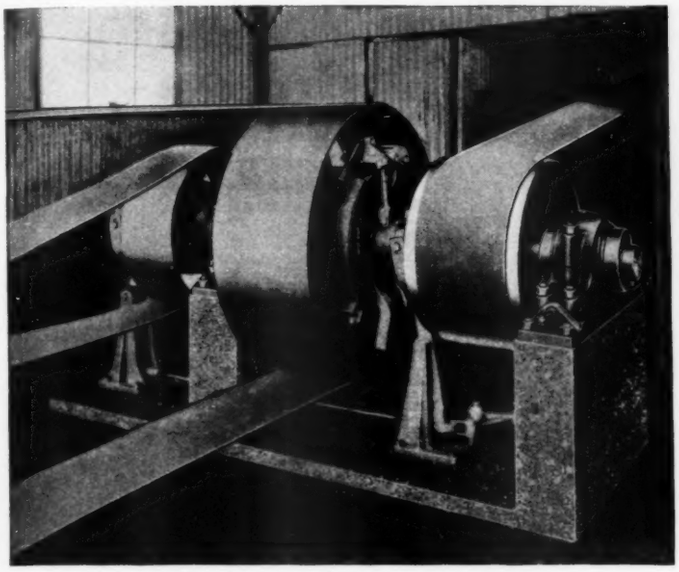
Inhibit Gum Formation
Reduce Acid Treatments
Maintain Anti-Knock Quality
Prevent Color Loss
Increase Yields of Gasoline
Assure Stabilization
Protect Plant Equipment

DU PONT
REG. U. S. PAT. OFF.

GASOLINE ANTIOXIDANTS

MANHATTAN BELTS

For Your Pumping Requirements

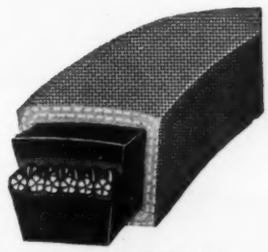


MANHATTAN A. P. I. COMPENSATED BELT in use

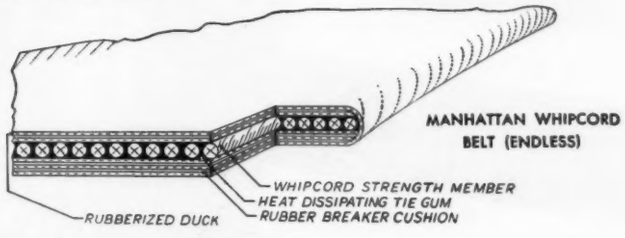
For the severe service which belts are called upon to perform in the oil fields, Manhattan has developed in each case the right belt for the job. Throughout the growth of the oil industry Manhattan engineers, both in the field and in the laboratory, have been at work on the task of developing belting and other products especially for the particular service required. Three types of belts—each capable of delivering long and dependable service—have resulted. These are: MANHATTAN A. P. I. COMPENSATED for pumping and general work, MANHATTAN WHIPCORD BELT for endless belt drives and CONDOR WHIPCORD V-BELT for all belts requiring V-Belts. These three belts are illustrated below.

CONDOR WHIPCORD V-BELT on geared power

MANHATTAN A. P. I. COMPENSATED—The Rubber Belt with equalized ply stresses.



CONDOR WHIPCORD V-BELT



OTHER SPECIAL PRODUCTS FOR THE OIL INDUSTRY

Rotary Hose, Oil-Loading Hose, Rubber Covered Pistons, Piston Sleeves, Stuffing Box Rings, Hose for Steam, Water, Fire and Air, Brake Lining for Draw Works, etc., Paranite G. O. P. (oil proof) Tank Truck and Car Hose, Slush Pump Intake Hose, Molded Rubber Products.

Distributed by The National Supply Company—in all oil producing centers

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES and FACTORIES, 70 TOWNSEND ST., PASSAIC, N. J.

15 YEARS' EXPERIENCE BEHIND IT!

1 YEAR'S ACCEPTANCE OF IT!

this INSIDE CUTTER,

that operates by *FRICTION* alone,

places

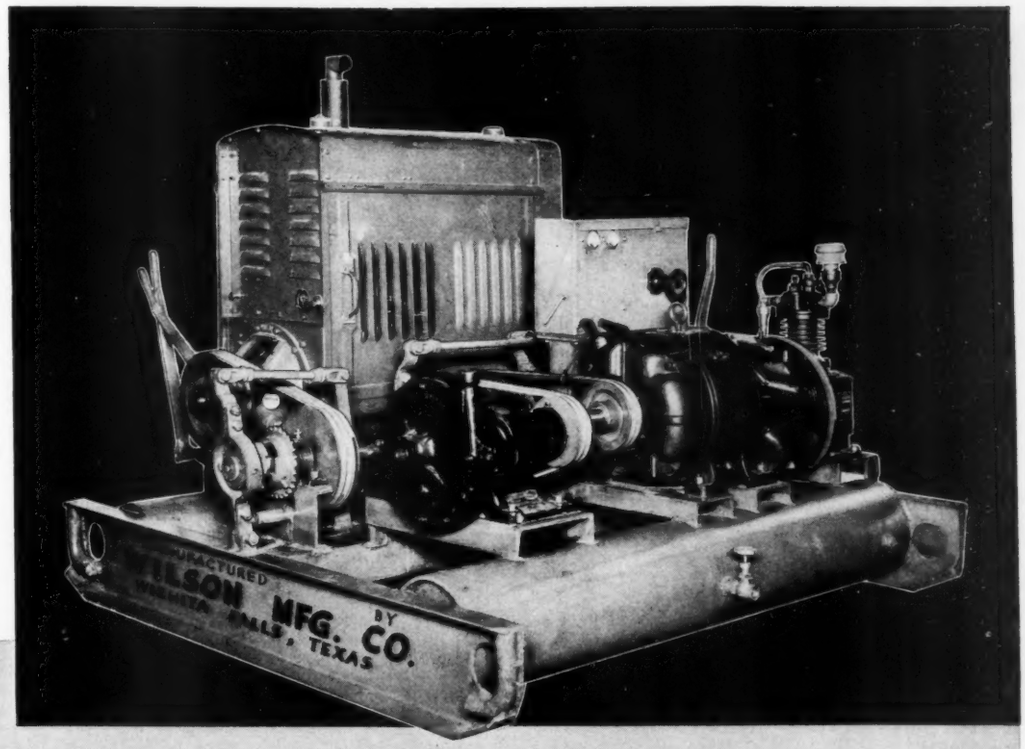
RED BALL

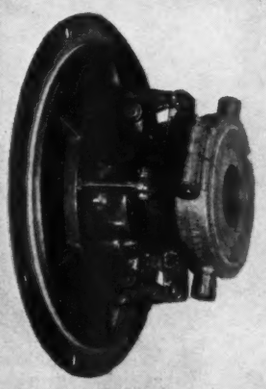
STILL FURTHER AHEAD OF THE FIELD!

Three friction rollers contact the inside of the pipe. Right-hand rotation gradually feeds the blade out by continuous friction of rollers contacting the beveled friction rings which are splined to the shaft. The shaft in turn drives the eccentric bottom of the shaft that is pinned to the cutter blade. A clutch type Releasing Spear run above the cutting tool permits cutting and pulling in a single operation, thus reducing the number of round trips.

This Improved Cutter gives RED BALL SERVICE the same leading position on inside pipe jobs it has held for 15 years on outside cutting.

The Wilson Utility unit is equipped with three Twin Disc Clutches and a Twin Disc Power Take-off Unit.





No. 3001-C-8 Twin Disc Toggle Action Clutch

OPERATORS...RIG BUILDERS ENGINE MAKERS *Prefer* TWIN DISC CLUTCHES

Twin Disc is the one oil field clutch that is accepted by oil field operator, rig builder, and engine maker alike.

The Wilson Utility Unit shown consists of a 5 kw. electric generator, air compressor, and centrifugal water pump . . . each equipped with a Twin Disc 3001 Model C-8 Toggle Action Clutch . . . all operated by a 4-cylinder gasoline engine equipped with a Twin Disc Power Take-off Unit.

The engine drives a line shaft by a triple V-belt, and the line shaft in turn drives the various pieces of equipment comprising the unit . . . the engine being arranged to run at slow speed while each piece of equipment runs at its own correct speed. At its standard speed of 850-900 rpm, the engine is powerful enough to run all three at the same time, or one at a time, with economy. And the Twin Disc Clutches transmit and control that power—dependably, efficiently, promptly and smoothly, with a minimum of attention.

Write today for specific recommendations. Engineering data on request.

TWIN DISC CLUTCHES

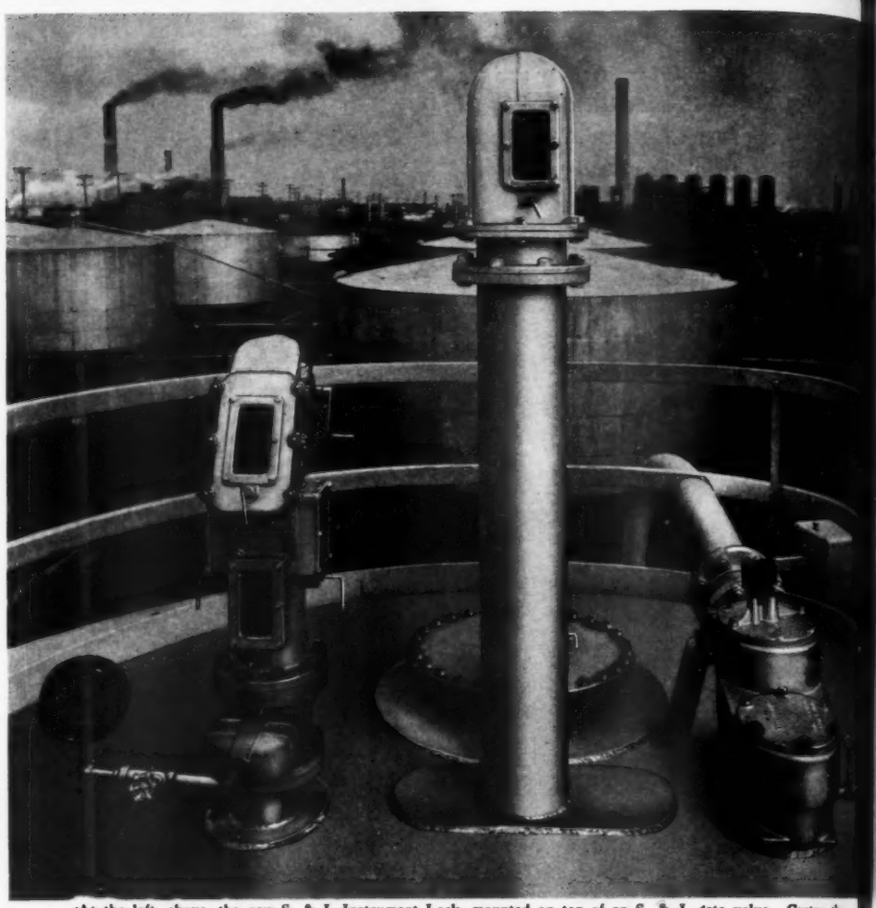
TWIN DISC CLUTCH COMPANY
1328 RACINE STREET — RACINE, WISCONSIN
SALES AND SERVICE OFFICE
310 EAST 4TH STREET — TULSA, OKLAHOMA

Futures in Oil!

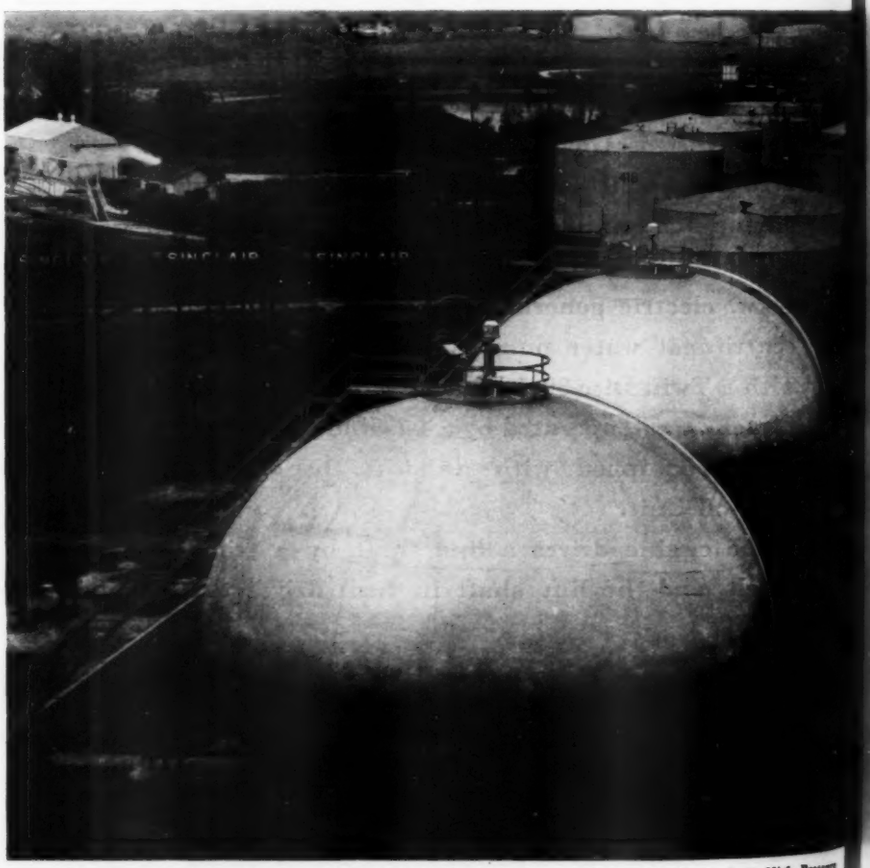
Long a dominant factor in furnishing fittings and accessories for conventional low pressure storage, S. & J. engineers have been quick to sense the shifting trend toward high pressure storage in spherical and spheroidal tanks. S. & J. is again in the vanguard of progress—ready today to supply gauging and conservation equipment for the petroleum storage of the future.

Included in the S. & J. line of equipment for spherical and spheroidal tanks are stationary and compensating types of high pressure automatic gauges, still type breather valves, special thief hatch covers, an instrument lock, pressure and vacuum valves, and a flame arrester approved by the Underwriters Laboratories.

When you contemplate replacements, or expansion of your storage facilities, you will, of course, consider spherical and spheroidal tanks. Familiarize yourself now with the quality equipment S. & J. offers to meet your present and future requirements. Your inquiries are solicited and given prompt attention.



At the left, above, the new S. & J. Instrument Lock, mounted on top of an S. & J. gate valve. Center, the S. & J. High Pressure Compensating Automatic Tank Gauge, and at right, the new S. & J. Still Valve.



Above are two Hortonspheroids of the Sinclair Refining Company, equipped with the S. & J. High Pressure Fittings shown in the picture at the top.

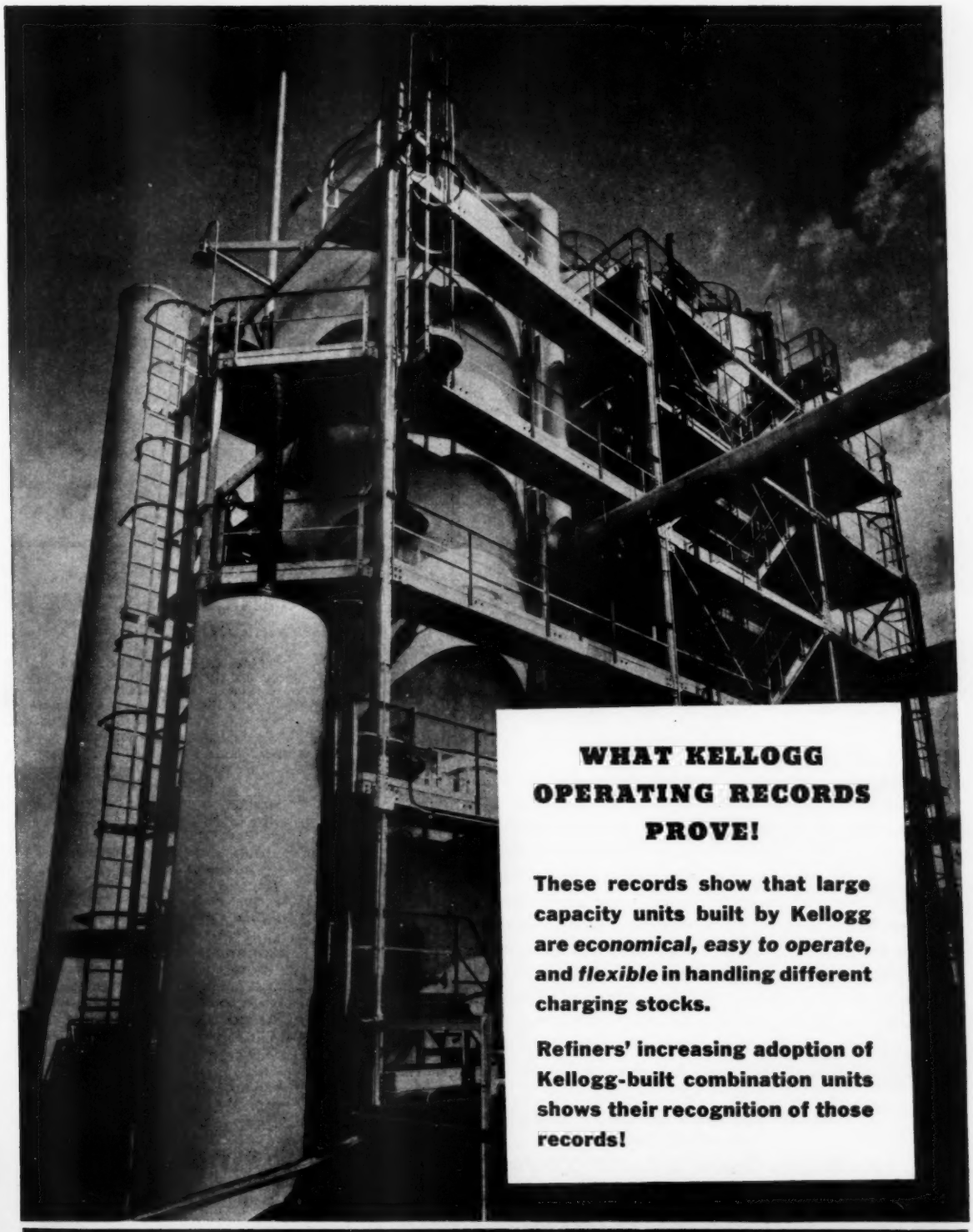
SHAND & JURS CO.

BERKELEY, CALIFORNIA

295 Madison Avenue, New York — 225 W. 11th Street, Los Angeles — 601 Fannin Street, Houston

S&J

SHAND & JURS



WHAT KELLOGG OPERATING RECORDS PROVE!

These records show that large capacity units built by Kellogg are *economical, easy to operate,* and *flexible* in handling different charging stocks.

Refiners' increasing adoption of Kellogg-built combination units shows their recognition of those records!

THE M. W. KELLOGG COMPANY · JERSEY CITY, NEW JERSEY · 225 BROADWAY, NEW YORK

Los Angeles: 1031 South Broadway · Tulsa: Philtower Building · EUROPEAN REPRESENTATIVE: Compagnie Technique des Petroles, 134 Boulevard Haussmann, Paris, France

KELLOGG

LICENSING AND CONSTRUCTION AGENTS under United States and Foreign Patents for: Gasoline Products Company, Inc.: Cross · Holmes-Manley · de Florez Tube and Tank · Combination Cracking Units ••• The Polymerization Process Corporation: Gas Polymerization Units ••• The Gray Processes Corporation: Clay Treating ••• Standard Oil Company (New Jersey): Standard Oil Company (Indiana): Union Oil Company of California: Lube oil refining with Propane and Phenol ••• Deasphalting · Dewaxing · Solvent Extraction and Acid Treating Plants

A *Special* STEEL VALVE FOR *Your* SERVICE CONDITIONS

BUY ACCO QUALITY

● There is no compromise when you select Reading Steel Valves. You get a valve specifically adapted to your needs. Whether your requirements call for carbon steel, any of a variety of alloy steels or a trim material for any particular service, there is a Reading Steel Valve designed for the purpose. ● The advantages of long experience and constant research are exemplified in Reading Steel Valve design and construction. For instance: the bodies are designed to provide the greatest natural strength and even expansion and contraction throughout the range of temperature changes—thus guarding against warping of seating surfaces. Unusually accurate machining insures parallel flange faces and permits proper location and rotation of bolting templates which facilitates erection and reduces line stresses. ● Specify Reading Valves.

READING-PRATT & CADY DIVISION
BRIDGEPORT, CONNECTICUT
AMERICAN CHAIN & CABLE COMPANY, Inc.
In Business for Your Safety

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OWEN SILENT SPRING COMPANY, Inc.
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READING STEEL CASTING DIVISION
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Electric Steel Castings, Rough or Machined

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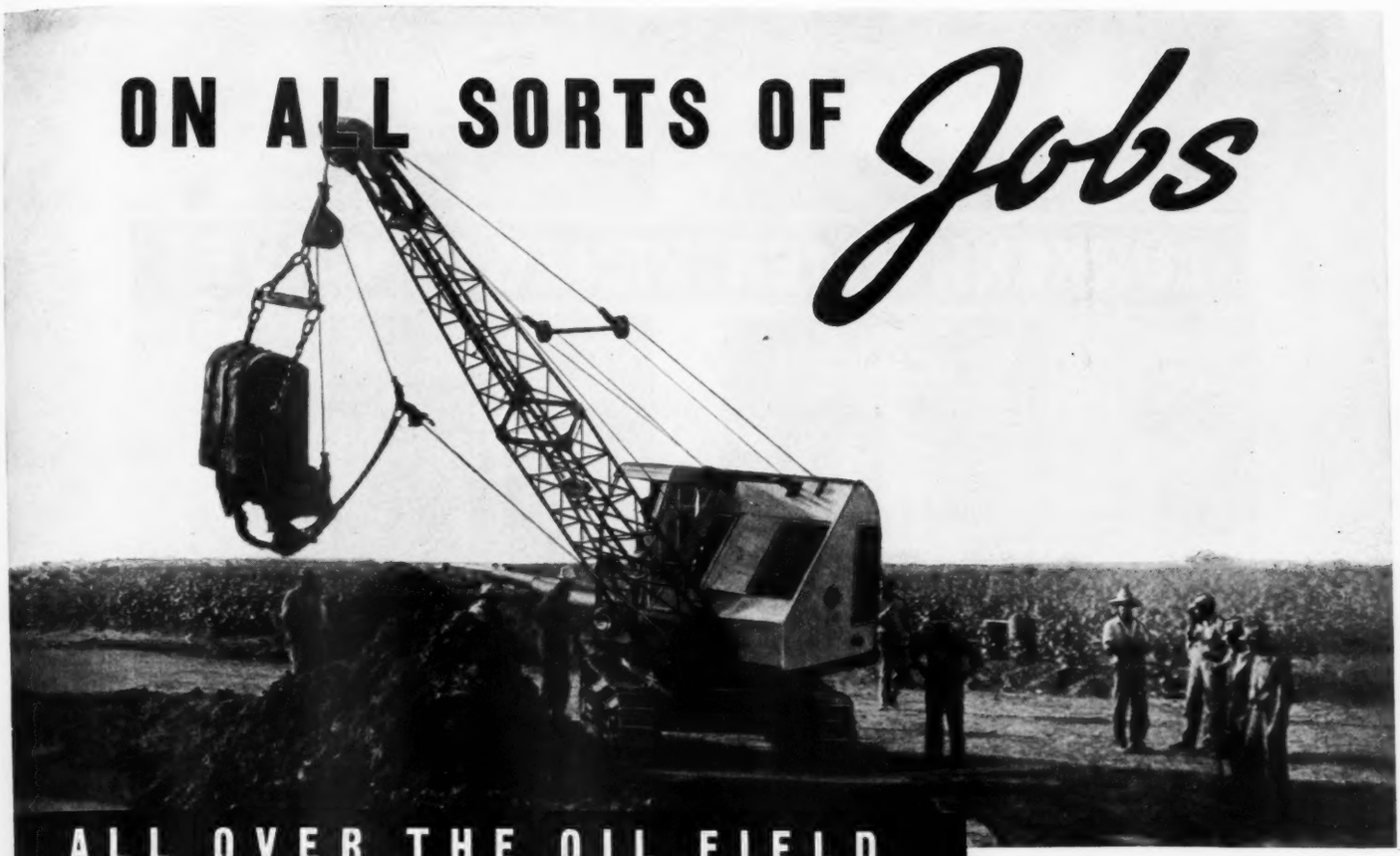
ACCO

READING•PRATT & CADY VALVES

ON ALL SORTS OF *Jobs*



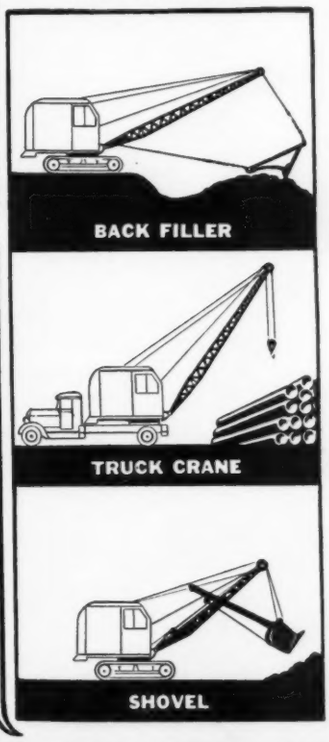
ALL OVER THE OIL FIELD
P&H BANTAM WEIGHT

● Here's just another sample of the all-round service delivered by this peppy little Bantam Weight. Here, converted as dragline, it's following up a trenching machine—clearing the trench of cave-ins before laying pipe.

No matter what the job, whether as crane, dragline, backfiller, trench hoe, shovel or pile driver—the Bantam Weight's ready for it. Light attachments of alloy steel make it possible to convert for six types of service right in the field. It's also available on crawlers or truck mounting.

All-welded construction with alloy steels make this machine lighter, huskier, faster! The peppy Ford V-8 motor delivers plenty of power for fast operating speeds at the lowest cost you ever found on a machine of this type. The Bantam Weight has "arrived" in the oil field. There's one working somewhere near you. Write us for complete details.

CONVERTIBLE FOR ALL TYPES OF SERVICE



THIS "SMOOTHARC" TRAILER WELDER IS EASIER TO USE

Single current control with a steady arc gives you even penetration, makes this "Smootharc" P&H-Hansen 150 amp. machine the simplest welder you ever operated. It's driven by a small air-cooled, gas engine, remarkably efficient. The whole unit's mounted on an automotive type trailer with cantilever springs and balloon tires to protect against damage from road shocks. Take it anywhere behind your car or truck at motor car speeds. With its 150 ampere capacity you have ample range for a wide variety of welding jobs. Ask us to send you Bulletin W-6.

HARNISCHFEGER CORPORATION
4527 W. National Ave., *Established 1884* Milwaukee, Wis.

HARNISCHFEGER
CORPORATION

EXCAVATORS ★ ELECTRIC CRANES — FOUNDED IN 1884 QUALITY P&H SERVICE BY HARNISCHFEGER & PAWLING — HOISTS ★ MOTORS ★ ARC WELDERS

LUNKENHEIMER "RENEWO" VALVES

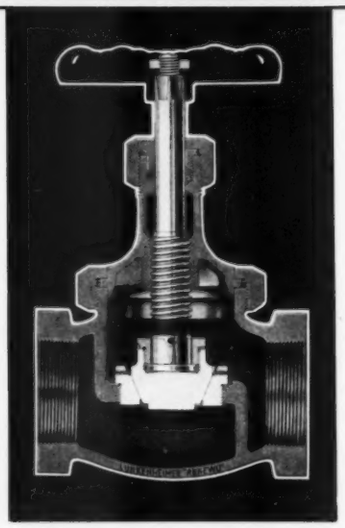


Fig. 73-P
Plug Type

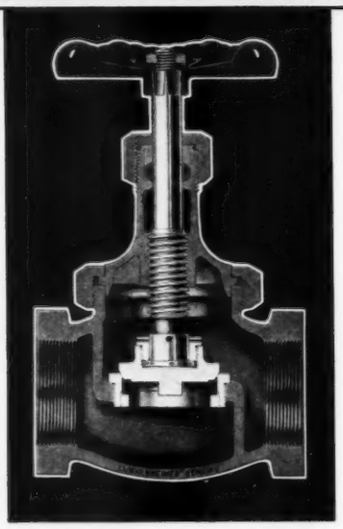


Fig. 73
Full-Way Type

Plug Type and Full-Way

If you have troublesome throttling, drain, drip and blowdown conditions that play havoc with regular seat and disc valves, try the Plug Type bronze "Renewo". With the exclusive and distinctive "NS5" Plug Type seats and discs, these valves offer an effective and satisfactory solution to the problem.

Full-Way "Renewo" valves have hard, wear-resisting "NT4" seats and discs and are excellent for general use. Plug Type valves are recommended where the service is severe, such as throttle valves on pumps, engines, compressors, steam coils, cookers, stills, etc.

"Renewo" valves provide an economical means of valve standardization. Only one stock of parts is necessary as all parts are interchangeable. To convert from full-way to plug type simply change the seat and disc. They are available in 200 and 300 lb. patterns.

The Lunkenheimer distributor carries ample stocks to take care of your requirements. Ask him for circular No. 541 or write us direct.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
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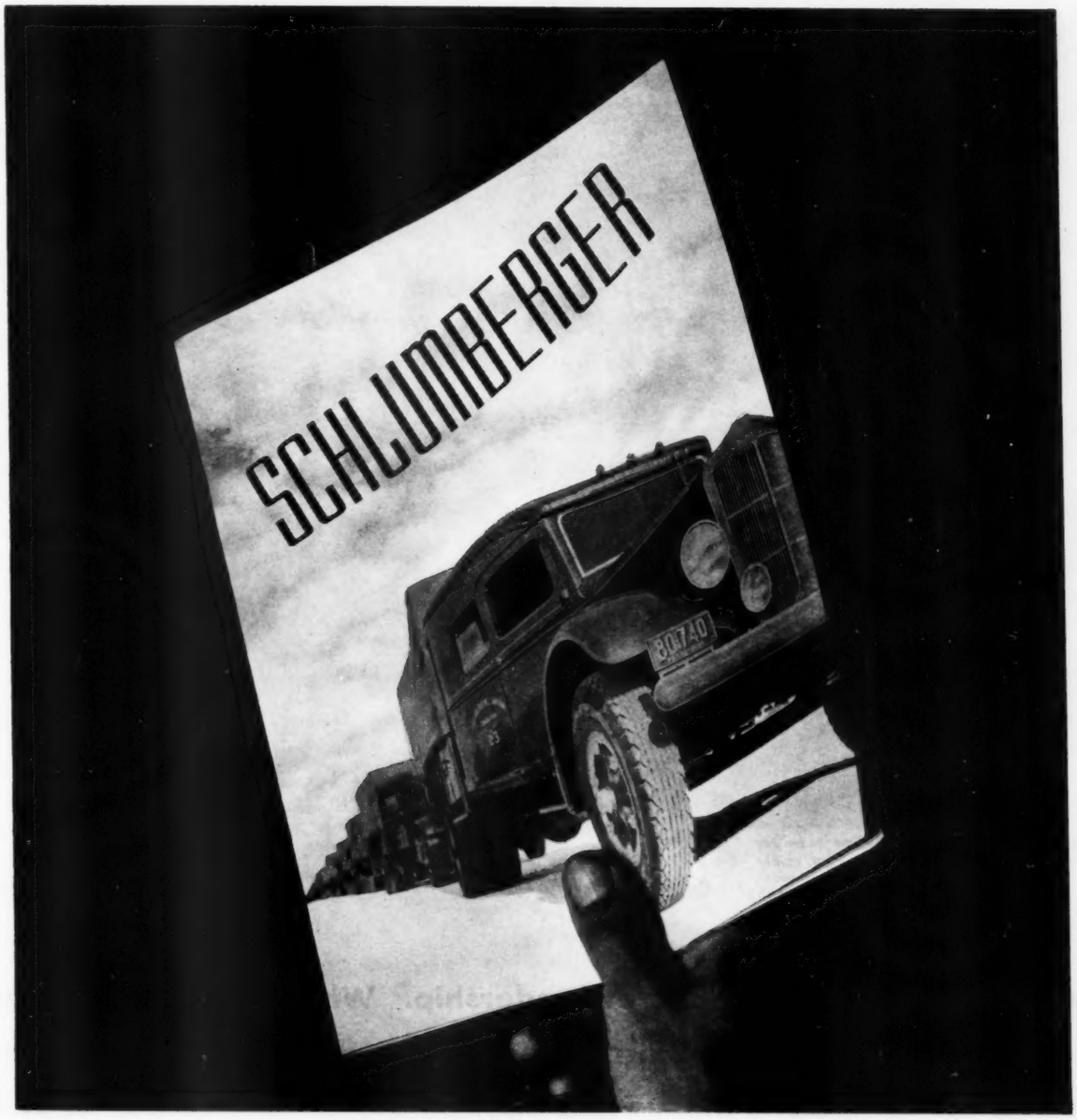
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

BOILER MOUNTINGS — LUNKENHEIMER VALVES — LUBRICATING DEVICES



Catalog No. 397, reproduced above, explains all of the different kinds of services available through Schlumberger Well Surveying Corporation. Ask for your copy.

SCHLUMBERGER

WELL SURVEYING CORPORATION

HOUSTON, TEXAS U.S.A.

"Electrical Well Logging"

Faced with expiring leases, Mel E. Baish, President of the Maljamar Oil and Gas Company, accompanied by M. W. McNutt, geologist, sought to stake a location. His car stuck, Baish sighted an old Prairie Schooner wheel. Baish settled the question by saying, "Here we will drill Baish No. 1." It became the discovery well of Lea County, New Mexico, and led to such great developments as the Hobbs, Jal and Eunice fields.

Ability to act decisively is the mark of leadership. When drifted sands prevented securing surface geology, Mel E. Baish's decision to drill a site based on his own belief, protected his company's leases and opened the discovery well of Lea County, New Mexico. From the first, Dowell has shown similar leadership in its decisive development of well-treating methods and materials and the strength of its personnel.

DOWELL PARAFFIN SOLVENT

Highly successful among Dowell well-treating materials is Dowell Paraffin Solvent. This product removes paraffin from formation and equipment quickly and economically. It reduces shut-down losses, pulling costs, requires no heat thus eliminating expansion strains on pipe, leaves no melted paraffin to coat face of pay and is harmless to equipment and formation. Write for further details or ask any Dowell representative.

DOWELL

DOWELL INCORPORATED · *Subsidiary of THE DOW CHEMICAL COMPANY* · *Executive Office:* MIDLAND, MICHIGAN · *General Office:* KENNEDY BUILDING, TULSA, OKLAHOMA

IN MEXICO . . . DOWELL SOCIEDAD ANONIMA, Apartado 2424, Mexico, D. F., Mexico · Tampico, Tamaulipas, Mexico

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SEMINOLE, OKLAHOMA · SHELBY, MONTANA · SHREVEPORT, LOUISIANA · TULSA, OKLAHOMA · WICHITA, KANSAS · WICHITA FALLS, TEXAS

OIL AND GAS WELL CHEMICAL SERVICE